

Guideline Distances from Development to Trees

Securing Space for Existing and New Trees



**Guidance retained from Residential Design Aid (4)
Space About Dwellings (1989) and in
Neighbourhoods For Living (2003)**

updated March 2011

Background

In 1989, Leeds City Council produced Residential Design Aid no 4 – "Space About Dwellings" (RDA 4) as a supplementary planning guide. Essentially this document consisted of a set of recommended guideline dimensions for distances between and around buildings as well as distances from specific tree species to the various aspects of new residential buildings and/or extensions. The objective in producing the document was to ensure that Site Planning and Design would allow sufficient space to be provided in layouts to satisfy both the needs of trees and those of future occupiers. Not only did the guidelines apply to existing trees but also to new tree planting.

In December 2003, the Council adopted "Neighbourhoods for Living" ([Link](#)), which is a Supplementary Planning Guidance document. Although Neighbourhoods for Living superseded RDA 4, it did allow for the retention of section 6 on Distances to Trees. This is referred to on page 8 in Neighbourhoods for Living as relevant background information. The principles for landscape setting and tree retention in new developments are set out on pages 23 and 57 of "Neighbourhoods for Living".

Guideline Distances from Development to Trees

2011 update

This document updates and supersedes the previously retained section 6 of RDA 4. This document has been renamed "Guideline Distances from Development to Trees - Securing Space for Existing and New Trees". The principles laid out in this document can be applied equally to all forms of development and not just to residential development. This document will be used as a tool to assess whether an application is achieving a satisfactory balance between the needs of trees and the needs of the buildings and their users.

1 Aims

The aim of this document is to ensure that sufficient space is allowed around buildings to enable:

- a) existing trees to be retained in a healthy condition by avoiding damage to roots and branches;
- b) existing and new trees to grow to maturity without adversely affecting:
 - the amenity of the buildings or indeed the building's structure
 - the amenity of the garden users
 - the structural stability of the buildings (assuming that the foundations are designed appropriately)

2 Existing Tree Information

As a basis on which to proceed, an existing tree survey will be required (in accordance with *BS5837: 2005 Trees in Relation to Construction*) detailing the exact location, size, species, condition and root protection areas of existing trees on the site or adjacent land. This will be produced by or on behalf of the developer and is usually essential to assess the need for tree removal or retention, and any tree surgery which may be required (a guidance note on development site tree surveys is available from the LCC website, the Development Enquiry Centre or the Landscape Team).

3 Adjacent Sites

Where adjacent sites contain existing trees, it is expected that the distances recommended in the *Dimensions Table* (p.7) will normally be applied.

4 The Precedence of Existing Trees Locations

Many trees protected by Planning Conditions, Tree Preservation Orders or Conservation Area legislation exist in closer proximity to existing dwellings than recommended in the *Dimensions Table*. The removal of such trees will not normally be justified purely on the basis of substandard distances. Any problems in such circumstances can normally be addressed through standard arboricultural practices such as thinning or crown lifting (in accordance with *BS 3998 1989: Recommendations for tree work*).

Serious problems of shade, ill health or evidence of structural damage would have to be apparent to override the normal presumption in favour of the retention of such trees for visual amenity or other reasons.

5 Relationship to British Standard 5837 and other guidance

This document "Guideline Distances from Development to Trees" can be read as complementary to *BS5837: 2005 Trees in Relation to Construction - Recommendations* and can be read in conjunction with it. British Standards can be purchased at StandardsUK.com ([Link](#))

The British Standard covers demolition as well as construction work and provides guidance on how to decide which trees are appropriate for retention. It also advises in great detail on the means of protecting such trees during the development process. The British Standard follows all the stages in the planning process from survey, through to design and implementation. However, it should be noted that the British Standard does not cover in empirical terms the amenity issues contained in this guidance document.

This document is complementary to the *National Joint Utilities Group (NJUG) publication Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 1: 8th October 2007* ([Link](#)) and can be read in conjunction with it. The NJUG document states that the guidelines also have relevance in respect of work carried out to highways near trees (e.g. kerbing, footways). Utility companies have a statutory right to carry out works in order to provide and maintain their apparatus and this publication advises on precautions that should be taken to minimise the risk of damage to both trees and apparatus. When referring to Tree Surveys the publication is cross referenced to *BS5837: 2005 Trees in Relation to Construction - Recommendations*.

6 Additional Precautions - Shrinkable Clay

Building Regulations Approved Document C gives general guidance on the likely potential for volume change (shrinkage or swelling) for some commonly occurring clays. The presence of trees and other vegetation can increase shrinkage by drawing moisture out of these soils, which can lead to the undermining of foundations. Approved Document C contains a map of the UK from which the clay types can be ascertained. The shrinkable clay distribution map does not indicate any such clays in the Leeds area.

Approved Document C refers to detailed guidance on this subject in the *NHBC Standards Chapter 4.2 Building Near Trees*. In the NHBC Standard Shrinkable Clay is defined under Clause D5 (b) as: those containing more than 35% fine particles and having a modified Plasticity index of 10% or greater. The existence of such soils in the Leeds area is unlikely and therefore Laboratory tests would be required to prove otherwise. If shrinkable clay is proven to be present in association with trees then

special measures may be appropriate to protect building foundations from movement. It may be necessary to adapt the design of foundations to anticipate future root growth of trees yet to reach maturity (as advised by a suitably qualified Structural Engineer). In these circumstances the distances given in the *Dimensions Table* may also have to be increased. Again, detailed guidance on this subject is given in *NHBC Standards chapter 4.2 Building Near Trees*.

7 Climate Change and The Case For Trees

Trees are well recognised for their aesthetic qualities as well as their contribution to local distinctiveness and bio-diversity. They can greatly enhance new development, but they also have a role to play in sustainable development and adapting to climate change. Climate change in Leeds will mean higher average temperatures and increasing incidents of sudden heavy rain.

Trees absorb CO₂, a major greenhouse gas and release oxygen into the atmosphere simultaneously. Trees can improve air quality by removing pollution. A shelterbelt of trees and shrubs can reduce the heat loss from buildings by reducing the impact of prevailing winds. Particular care has to be exercised with trees located on the south side of buildings. A balance has to be struck between providing shelter and not overshadowing the buildings as this may limit their passive solar gain. Overshadowing may also limit the potential for the addition of solar technologies (e.g. solar roof panels).

The warming of the urban environment in summer has important implications for human comfort and well being. This is known as the Urban Heat Island Effect. Trees along with other vegetation can help moderate the temperature through evapo-transpiration. They also provide shading. Trees canopies can also make a contribution to Sustainable Urban Drainage in delaying the rate at which rainwater reaches the ground and therefore the drainage system. Overloading the drainage system leads to flooding. For further information please refer to Leeds City Council draft *SPD Building for Tomorrow Today - Sustainable Design and Construction* (at final draft stage January 2011).

8 The Guideline Distances

The *Dimensions Drawing* (p. 5) illustrates the likely locations for trees on a development with the various distances labelled with letters A, B, C etc. These letters are cross-referenced to the *Dimensions Table* which gives actual dimensions for the minimum distances in each situation. The distances are measured from the centre of the trunk and at right angles to the dwelling or garage. However measurement "C" is measured at 45° from the corner of the dwelling, and measurement "E" is taken between the centre of the trunk and the edge of the usable garden space.

The distance dimensions are to be used for both existing and proposed new planting, to allow growth to maturity without conflicting with the amenity of the occupants or causing occupants to be fearful of the proximity of trees. Distances vary for different species due to factors such as: the potential ultimate size; canopy shape and density (e.g. wide canopy with dense foliage); light and shade effects; extent and nature of root systems and the water demands of certain trees.

With regard to existing trees, the distances will also allow for construction to take place without causing dieback, or death of the tree (assuming due care is taken to protect the root spread and canopy during construction)

These distances are guidelines only. They may need to be increased or decreased depending on the particular situation, e.g. if trees lie to the south of a building shading may be a major issue and greater distances may be required. Variations will be subject to the agreement of the Local Planning Authority. The heights and spreads in the *Dimensions Table* are typical dimensions of trees grown in an open situation in the Leeds area.

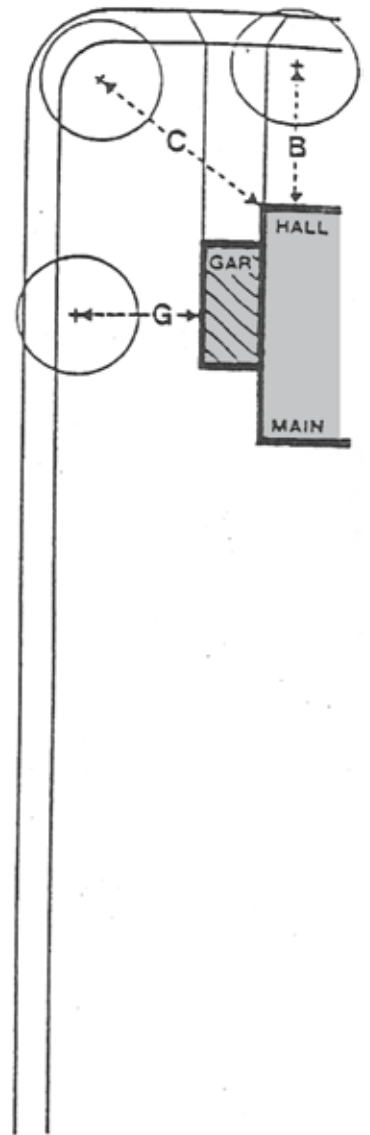
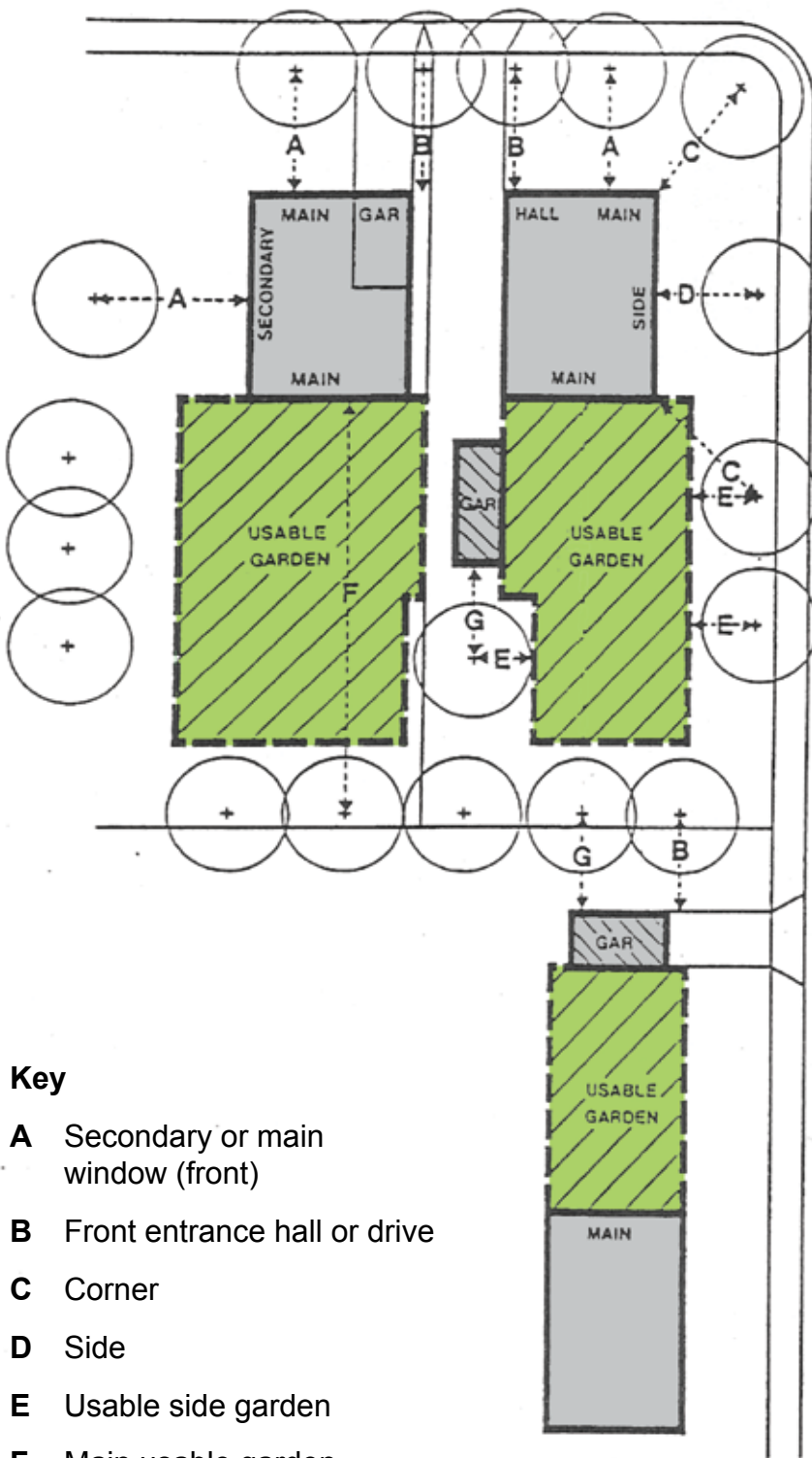


Poor relationship: Beech trees at 4m from the front of a dwelling are overbearing and cut out light



Better relationship: Usable gardens - beech trees on the rear boundary

Dimensions Drawing



Key

- A** Secondary or main window (front)
- B** Front entrance hall or drive
- C** Corner
- D** Side
- E** Usable side garden
- F** Main usable garden
- G** Garage

9 Species - Dimensions Table

The list includes most trees suitable for planting in housing areas. There are many other cultivars too numerous to list here, some of which would be acceptable depending on location. Inclusion in the list does not imply suitability for a particular situation. The advice of a Landscape Architect should normally be sought.

Planting of poplars and willows, except for a few small or shrubby varieties, is normally inadvisable near housing due to their aggressive root systems. Sycamore is unlikely to be chosen for new planting, but its retention is often desirable.



Poor relationship: Maple trees too close to flats necessitate continuous harsh pruning and disfigurement to reduce the canopy sizes



Better relationship: Communal space around flats - maple trees

Dimensions Table Recommended Minimum Distances of Built Development to Trees (all dimensions in metres)

Botanical Name	Common Name	Height	Spread	Front: Main	Front: Hall	Corner	Side	Usable Side	Main Garden	Garage	Ultimate Size Category S = Small M= Medium L = Large VL= Very Large
Reference key as used on distances to trees plan (<i>Dimensions Drawing</i>)				A	B	C	D	E	F	G	
Acer campestre	Field Maple	12	8	8	8	5	6	4	14	4	S-M
Acer capillipes	Red Snake bark Maple	10	6	6	5	4	5	3	12	4	S-M
Acer cappadocicum	Cappadocian Maple	15	8	10	6	5	6	4	14	5	M-L
Acer davidii	Pere David's Maple	10	7	7	5	4	5	3	12	4	S-M
Acer ginnala	Amur Maple	6	4	5	4	3	4	3	12	3	S
Acer griseum	Paper-bark Maple	8	6	7	6	4	5	3	12	3	S
Acer hersii	Hers' Maple	10	7	7	5	4	5	3	12	4	S-M
Acer negundo	Box Elder	10	8	8	6	5	6	4	12	4	M
Acer palmatum	Japanese Maple	5	4	4	4	2	2	2	10	2	S
Acer platanoides	Norway Maple	18	10	10	8	6	7	5	16	6	L
Acer pseudoplatanus	Sycamore	20	12	12	10	8	10	6	18	8	L
Acer rubrum	Red Maple	18	10	10	8	6	7	5	16	6	L
Acer rufrinerve	Grey-budded Snake Bark Maple	10	7	7	5	4	5	3	12	4	S-M
Acer saccharinum	Silver Maple	18	10	10	8	6	7	5	16	6	L
Aesculus x carnea "Briottii"	Red Horse Chestnut	14	10	9	7	6	7	5	14	5	M-L
Aesculus hippocastanum	Horse Chestnut	18	12	12	10	8	10	6	18	8	L
Ailanthus altissima	Tree of Heaven	18	10	10	8	6	7	5	16	6	L
Alnus glutinosa	Common Alder	16	8	10	6	5	6	4	14	4	M
Alnus cordata	Italian Alder	16	8	10	6	5	6	4	14	4	M
Alnus incana	Grey Alder	16	8	10	6	5	6	4	14	4	M
Amelanchier laevis	Snowy Mespilus	6	4	6	5	2	3	2	10	2	S
Araucaria araucana	Monkey Puzzle	16	5	6	5	4	6	2	12	4	M
Betula pendula/pubescens	Silver Birch	18	10	8	6	5	6	4	12	5	M
Betula jacquemontii, B. utilis	Himalayan birch	14	8	6	4	5	4		12	5	M
Carpinus betulus	Hornbeam	14	8	10	8	5	7	4	14	5	M

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Reference key as used on distances to trees plan (<i>Dimensions Drawing</i>)				A	B	C	D	E	F	G		
Carpinus betulus 'Fastigiata'	Fastigate Hornbeam	14	8	8	5	4	6	2	12	4	M	
Castanea sativa	Sweet Chestnut	18	12	14	12	8	10	6	18	8	L	
Cedrus atlantica	Atlas Cedar	18	12	14	12	8	10	6	18	8	L	
Cedrus deodara	Deodar	18	12	14	12	8	10	6	18	8	L	
Chamaecyparis lawsoniana "Ellwoodii"	Lawson Cypress	8	3	6	5	3	4	1	10	3	S	
Chamaecyparis l. "Fletcheri"	Lawson Cypress	8	3	6	5	3	4	1	10	3	S	
Cotoneaster frigidus	Tree Cotoneaster	5	4	5	4	2	3	2	10	3	S	
Crataegus crus-galli	Cockspur Thorn	6	4	5	4	2	3	2	10	3	S	
Crataegus lavalleyi	Hybrid Cockspur Thorn	6	4	5	4	2	3	2	10	3	S	
Crataegus "Paul's Scarlet"	Red Hawthorn	12	5	6	5	3	4	2	10	3	S-M	
Crataegus x prunifolia	Broad-leaved Cockspur Thorn	5	5	5	4	3	3	2	10	2	S	
X Cupressocyparis leylandii	Leyland Cypress	20	5	12	10	6	7	3	18	4	L	
Cupressus glabra	Smooth Arizona Cypress	12	12	12	10	8	8	6	16	6	M-L	
Cupressus macrocarpa	Monterey Cypress	20	10	12	10	6	8	5	18	5	L	
Davidia involucrata	Dove Tree	12	8	8	6	5	7	4	12	5	M	
Eucalyptus niphophila	Snow Gum	6	4	5	4	3	4	2	10	3	S	
Fagus sylvatica	Beech	25	20	16	14	10	12	8	22	8	VL	
Fraxinus excelsior	Ash	25	16	16	14	10	12	8	20	8	VL	
Fraxinus excelsior "pendula"	Weeping Ash	8	10	10	8	5	7	3	16	4	S-M	
Fraxinus oxycarpa "Raywood"	Raywood Ash	20	14	16	14	10	12	8	20	8	VL	
Fraxinus ornus	Manna Ash	10	6	8	6	4	5	3	12	3	S-M	
Ginkgo biloba	Maidenhair Tree	16	6	10	8	5	6	3	14	4	M-L	
Ilex x altaclarensis	Highclere Holly	10	6	8	6	3	4	3	12	3	S-M	
Ilex aquifolium	Common Holly	10	6	8	6	3	4	3	12	3	S-M	
Juglans regia	Walnut	18	12	12	10	8	10	6	18	8	L	

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Laburnum x waterii	Voss's Laburnum	8	4	6	5	3	4	2	10	3	S	
Larix decidua	Common Larch	16	6	8	6	4	5	3	16	3	M-L	
Liriodendron tulipifera	Tulip Tree	16	10	12	10	6	8	5	16	5	M-L	
Malus floribunda	Japanese Crab	5	6	6	5	3	4	3	10	3	S	
Malus hupehensis	Hupei Crab	6	6	6	5	3	4	3	10	3	S	
Malus 'John Downie'	Crab	7	5	6	5	3	4	3	10	3	S	
Malus tschonoskii	Pillar Apple	10	5	8	6	4	5	3	12	3	S-M	
Metasequoia glyptostroboides	Dawn Redwood	18	6	10	8	5	8	5	18	3	L	
Morus nigra	Black Mulberry	5	5	6	4	3	3	2	10	3	S	
Nothofagus oblique	Roble Beech	18	12	12	10	8	10	6	18	8	L	
Pinus cembra	Stone Pine	16	6	8	6	4	5	3	16	4	M	
Pinus nigra	Austrian Pine	20	8	10	8	5	6	4	18	4		
Pinus nigra maritima	Corsican Pine	20	6	10	8	5	6	4	18	5		
Pinus parviflora	Japanese White Pine	8	6	8	6	4	5	3	12	3		
Pinus sylvestris	Scots Pine	16	6	8	6	4	5	3	16	4		
Picea omorika	Serbian Spruce	20	3	12	10	6	6	1	18	6	L	
Platanus x hispanica	London Plane	18	12	14	12	8	10	6	18	8	L	
Pyrus calleryana "Chanticleer"	Ornamental pear, common pear	12	6	8	6	4	4	3	10	3	S-M	
P. Communis												
Populus alba	White Poplar	18	14	12	10	6	8	5	18	5	L	
Populus nigra betulifolia	Native Black Poplar	18	14	12	10	8	10	5	20	5	L	
Populus nigra 'Italica'	Lombardy Poplar	20	4	14	12	6	8	6	18	6	L	
Populus x 'Serotina'	Black Italian Poplar	20	18	16	14	8	10	6	20	6	VL	
Populus tremula	Aspen	14	8	10	8	6	8	4	16	4	M	
Prunus avium	Wild Cherry	16	12	12	10	8	10	6	18	6	M-L	
Prunus cerasifera	Myrobalan Plum	6	4	6	5	3	3	2	10	3	S	

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Prunus pissardii	Purple/leaved Plum	6	4	6	5	3	3	2	10	3	S	
Prunus dulcis	Almond	6	5	6	5	3	3	2	10	3	S	
Prunus x hillieri "Spire"	Ornamental Cherry	8	3	6	5	3	3	2	10	3	S	
Prunus lusitanica	Portugese Laurel	5	5	6	5	3	3	2	10	3	S	
Prunus sargencii	Sargent's Cherry	8	6	7	5	4	5	3	12	4	S	
Prunus padus	Bird Cherry	10	6	8	6	4	5	3	12	4	S-M	
Prunus serrulata	Cheal's Weeping Cherry											
P S "Amanogawa"	Japanese Cherry	10	2	5	4	4	4	1	10	3	S-M	
P S "Hokusai"	Japanese Cherry	6	5	6	5	3	4	2	10	4	S	
P S "Kanzan"	Japanese Cherry	10	8	8	6	5	6	4	12	5	S-M	
P S "Pink Perfection"	Japanese Cherry	6	5	6	5	3	4	2	10	3	S	
P S "Shirofugen"	Japanese Cherry	6	6	6	5	3	4	2	10	3	S	
P S "Shirotae"	Japanese Cherry	8	8	8	6	5	6	4	12	5	S-M	
P S "Tai-Haku"	Japanese Cherry	10	8	8	6	6	6	4	12	6	S-M	
P S "Ukon"	Japanese Cherry	8	6	8	6	5	6	3	12	4	S	
Prunus subhirtella	Spring Cherry	8	5	6	5	4	5	2	10	4	S	
Prunus subhirtella "Autumnalis"	Autumn Cherry	8	5	6	5	4	5	2	10	4	S	
Prunus x yedoensis	Yoshino Cherry	10	8	8	6	5	6	4	12	5	S-M	
Pyrus salicifolia	Weeping Pear	6	4	5	4	3	3	2	10	3	S	
Quercus rubra	Red Oak	20	12	14	10	8	8	6	18	8	L	
Quercus cerris	Turkey Oak	20	12	14	10	8	8	6	18	8	L	
Quercus coccinea	Scarlet Oak	20	10	14	10	8	8	6	18	8	L	
Quercus ilex	Holm Oak	16	10	12	10	6	8	5	14	6	M-L	
Quercus petraea	Sessile Oak	20	10	14	10	8	8	6	18	8	L	
Quercus robur	English Oak	20	16	16	12	10	12	8	20	10	L	

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Robinia pseudoacacia	False Acacia	18	10	12	10	6	7	5	16	6	L	
Salix alba	White Willow	25	16	16	14	6	10	8	22	8	VL	
Salix caprea	Goat Willow	14	6	8	7	4	6	6	14	6	S-M	
Salix fragilis	Crack Willow	18	14	14	12	6	8	7	18	7	L	
Salix x 'Chrysocoma'	Weeping Willow	18	20	16	14	10	12	8	20	8	VL	
Sorbus aria	Whitebeam	10	6	8	6	4	5	3	12	4	S-M	
Sorbus aucuparia	Rowan	18	6	6	5	4	5	3	10	4	S	
Sorbus "Embley" (Discolor)	Chinese Scarlet Rowan	8	6	6	5	4	5	3	10	4	S	
Sorbus hupehensis	Hupeh Rowan	8	6	6	5	4	5	3	10	4	S	
Sorbus x intermedia	Swedish Whitebeam	8	6	6	5	4	5	3	10	4	S	
Sorbus sargentiana	Sargent's Rowan	8	6	6	5	4	5	3	10	4	S	
Sorbus x churingiaca	Bastard Service tree	10	5	6	5	4	5	2	10	4	S-M	
Taxus baccata	Yew	10	8	8	6	5	6	4	12	5	M-L	
Tilia cordata	Small-leaved Lime	20	10	12	10	8	10	5	18	8	L	
Tilia x euchlora	Caucasian Lime	16	8	10	8	5	7	4	16	5	M-L	
Tilia x europaea	Common Lime	30	16	16	12	8	10	8	20	8	VL	
Tilia platyphyllos	Large-leaved Lime	25	16	16	12	8	10	8	20	8	VL	
Tsuga canadensis	Eastern Hemlock	20	10	12	10	8	10	5	18	8	L	
Ulmus glabra	Wych Elm	18	10	12	10	6	8	3	18	7	M-L	
Ulmus procera	English Elm	20	10	14	12	8	10	6	20	7	L	
Ulmus wheatleyi	Wheatley Elm	18	8	10	8	4	6	3	16	6	M-L	



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