In extreme cases a completely different type of foundation may be necessary, such as a raft, or pile and beam solution. These types of foundations must be designed by a Structural Engineer and details submitted to the local authority.

Trees adjacent to a building are often the cause of structural problems such as cracking and sometimes movement. Trees are a specialist subject and your architect should be in a position to advise you before making a Building Regulation submission. Should you elect to carry out the work under the Building Notice procedure then I would advise you to seek the advice of a Structural Engineer prior to starting work.

- **Planting New Trees Close to Buildings**

  Consider the future consequences when deciding to plant a tree near your property. It is inadvisable to plant a tree closer to the property than the eventual mature height of tree (eg. a conifer hedge can grow approximately 450mm a year and could reach 18 metres in height).

- **Further Advice**

  Before felling any trees you must first check that the trees are not subject to a Tree Preservation Order, or sited in a Conservation Area. For advice before felling any trees, please contact the Planning Section of the authority on **(01325) 388619.**

- **Please Note**

  For any informal advice on the depth of foundations close to trees, the Building Control Section would be pleased to assist you. Please ring **(01325) 370820** and ask for a Building Control Surveyor.

TRANSLATION INFORMATION

If English is not your first language and you would like more information about this document, or if you require information in large print or braille or on tape, please contact (01325) 370820.

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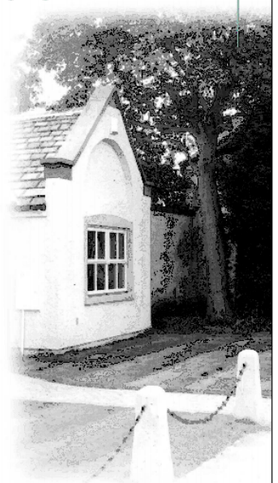
Foundations Close to Trees

Building Regulation Guidance Note



Local Authority BUILDING CONTROL

DARLINGTON BOROUGH COUNCIL

FOUNDATIONS CLOSE TO TREES

These notes are to assist the house owner when considering carrying out building work near trees.

- **Trees Adjacent to Dwellings**

  When considering extending your property it is important to look around the area on which you want to build and check that no obstructions exist. These could take the form of underground drains, overhead cables, existing structures and trees.

  Whilst the builder and architect can overcome most difficulties, building near trees can sometimes cause particular problems.

- **Trees**

  Trees themselves are pleasant to look at and enhance any garden, however, tree roots can present hidden problems to the future extension. In simple terms depending on various factors the closer a tree is to a new building the deeper the foundations must be taken down. The minimum depth for any foundation is 900mm, however this depth could be greatly increased, depending on how close the tree is to the new extension.

  The basis of design is to ensure that the foundations are taken down to such a depth, that they will not be affected by tree roots. The trees themselves do not necessarily have to be large varieties, such as Oak or Beech, even small trees, such as Plum or Apple, could have an effect on foundations.

- **The Solution**

  In the Darlington area the majority of soils are of medium shrinkable clay. The table gives some common trees and the minimum depth required to the foundations, dependant upon the distance the foundations are from the trees.

SPECIES	DISTANCE FROM BUILDING											
	1m	2m	4m	6m	8m	10m	12m	14m	16m	18m	20m	22m	24m
Oak	2.70	2.60	2.45	2.30	2.15	1.95	1.80	1.65	1.45	1.30	1.10	0.95	0.90
Poplar	2.70	2.60	2.50	2.40	2.25	2.15	2.00	1.90	1.70	1.60	1.45	1.30	1.20
Willow	2.70	2.55	2.50	2.40	1.95	1.85	1.55	1.40	1.20	0.95			
Hawthorn	2.55	2.40	2.10	1.75	1.45	1.00							
Leylandii	2.60	2.40	2.00	1.75	1.20	0.90							
Cedar	1.65	1.50	1.20	0.90									
Fir	1.65	1.50	1.20	0.90									
Pine	1.65	1.50	1.20	0.90									
Spruce	1.65	1.50	1.20	0.90									
Chestnut	1.75	1.65	1.50	1.40	1.30	1.15	1.00						
Ash	1.75	1.65	1.50	1.40	1.30	1.15	1.00						
Lime	1.75	1.65	1.50	1.40	1.30	1.15	1.00						
Sycamore	1.75	1.65	1.50	1.40	1.30	1.15	1.00						
Pear	1.65	1.60	1.30	1.05									
Cherry	1.75	1.65	1.50	1.30	1.15	1.00							
Alder	1.75	1.65	1.50	1.30	1.15	1.00							
Maple	1.75	1.65	1.50	1.30	1.15	1.00							
Beech	1.75	1.65	1.50	1.30	1.15	1.00							
Plum	1.65	1.50	1.20	0.90									
Laurel	1.65	1.50	1.20	0.90									
Apple	1.65	1.50	1.20	0.90									
Laburnum	1.15	1.05	0.90										
Birch	1.20	1.10	0.95										
Holly	1.20	1.10	0.95										
Magnolia	1.15	1.00											
Mulberry	1.15	1.00											

Foundation Depth in Metres

Also should you have an existing tree in your garden, having it felled will not mean that the foundations will not be affected. Heave in clay soil can take place when it takes up moisture and swells, after the felling or removal of trees and hedgerows. It can also occur beneath a building if roots are severed by foundations. To avoid adverse effects of heave, the design of the foundations and substructure should take this into account. The sketches show typical construction details for trench fill foundations together with precautions to prevent heave damage.