

# TREE ROOT PROTECTION

Trees are an important part of the environment. They bring not only an aesthetic value in the form of visually softening and screening buildings, but also absorb pollution, noise and provide a viable habitat for wildlife. The preservation of healthy trees in a local amenity is therefore beneficial to both residents and the local community.

## THE PROBLEM



With increased urbanisation, the requirement to build access roads, house driveways, overspill car parks and vehicle hard standings near to mature trees is ever present. Traditional methods of construction are not acceptable in these situations due to the damage which can be caused to the tree feeder roots, weakening or killing the tree. Most tree roots are present within the first 600mm of soil depth and extend from the tree a distance equal to 60-75% of the tree's height. 80% of the crushing damage caused to these roots can be done in the first construction vehicle pass over the site.

Damage to tree feeder roots is mainly caused by:

- Severance of roots during site excavations.
- Compaction of surface soils by vehicular traffic, causing reduced oxygen and nutrient exchange between the roots and surrounding soils.
- The installation of impermeable wearing courses such as concrete or tarmac, preventing surface water permeating to the root system below.
- Changes in water table or ground level due the installation of structural foundations.



## TREE PRESERVATION ORDERS

To ensure the protection of mature trees, the majority of those located within established areas of urban development will already be subject to Tree Preservation Orders (TPOs). The principal effect of a TPO is to prohibit the;

*“cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without the LPAs [local planning authority's] consent. The cutting of roots, although not expressly covered above, is potentially damaging and so, in the Secretary of State's view, requires the LPAs consent”.*

**“Tree Preservation Orders: a guide to the law and good practice”  
Office of the Deputy Prime Minister**

Trees may also be protected if they are within a designated Conservation Area. TPOs are administered by Arboricultural Officers within local councils, who have the responsibility for approving any proposed works. Involvement of the Arboricultural Officer at an early stage is strongly advised as failure to comply with TPOs can result in fines of up to £20,000 for each tree destroyed.

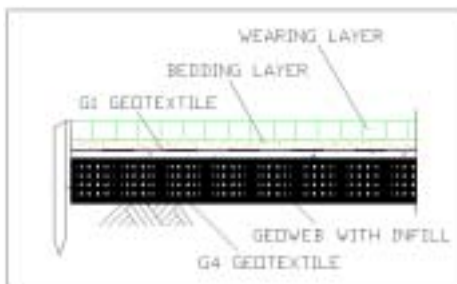
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## THE SOLUTION

Where access driveways or vehicle hard standing areas are planned in areas adjacent to trees, Arboricultural Officers will normally specify a 'no dig' construction to eliminate the damage associated with normal construction methods. With this method no removal of surface soils is allowed. Instead, a permeable structural sub-base is laid directly onto the existing ground level with a permeable wearing course, such as grass reinforcement, low tack resin coated gravels or block paving, laid on top.

'No dig' construction may be accommodated with the use of perforated Geoweb in the sub-base layer. Geoweb reduces the overall depth of construction by introducing a cellular structure which dissipates downward loads by a horizontal transfer through the cell structure. This process in conjunction with the perforated cell wall also imports structural integrity to free draining aggregates which



Expanding and staking  
Geoweb panels



Infilling the Geoweb

would otherwise be unacceptable in road construction. Therefore, a robust, shallow and free-draining sub-base is achieved, which allows vehicular access whilst allowing water and oxygen to permeate down to the tree roots.

In accordance with British Standard BS5837: 1991 - Guide for Trees in Relation to Construction and APN 1:1996 – Driveways Close to Trees, Geoweb acts to protect tree roots in three main ways;

1. **Used with the correct infill, Geoweb allows the construction of a permeable sub-base.**
2. **Geoweb enables 'no dig' construction to be used, avoiding any severance of tree roots.**
3. **Geoweb prevents the compaction of soil surrounding roots.**

The permeable wearing course to complete the system can be accommodated through Ecoblock, a grass protection or gravel retention system. The cellular construction of Ecoblock provides a fully permeable, attractive wearing course which is capable of accommodating heavy vehicle loads, whilst allowing the exchange of oxygen and free drainage of water to the sub-base.

The Geoweb system has been used in tree root protection applications with great success for the following clients:

- **Node House - North Dorset District Council**

A number of mature beech trees have been protected during the construction of a large residential property. This site has been closely monitored for the past 30 months by local tree officers. There have been no noticeable problems.

- **Woodfield School - Wigan Metropolitan Borough Council**

Geoweb was used to protect the roots of trees lining an access road and in an extended car parking area.

### KEY BENEFITS OF THE GEOWEB SYSTEM:

- **'No-dig' solution**
- **Cost effective**
- **Fast and simple to install**
- **Design flexibility**
- **Environmentally-friendly**
- **Tried and tested product**



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A member of the Heiton Group

We can provide comprehensive technical support for our range of ground engineering products. If you have a particular application which you would like to discuss in more detail, please contact our Specification Sales Team on 01204 862222, who will be pleased to arrange for one of our representatives to contact you.