## Introduction

BS5837 (2012), recommends that cellular confinement systems (CCS) be employed in the creation of 'no-dig' hard surfaces, where such proposed surfaces would transgress and therefore damage the Root Protection Areas (RPA's) of retained trees on site. The new surface will in effect be built above existing ground and will be permeable to water and air flow.

The adoption of a no-dig method of construction in the vicinity of the trees will:

1. ensure that physical damage to tree roots by excavation will be avoided
2. avoid long term stress to tree roots resulting from soil compaction caused by vehicular movements
3. ensure that water and minerals continue to be available to the roots
4. ensure that gas exchanges can continue around the roots

The extent of the RPA's is based upon calculations as advised by BS5837 (stem dia x 12) and are indicated on the Tree Constraints Plan. Such areas have been increased where the CCS is to be employed to provide a safety buffer and protection for future root growth for the trees concerned.

Example of Cellweb by Geosynthetics Ltd

This method statement has been prepared to ensure the longevity and health of retained trees on site. The CCS described here should in conjunction with the proposed Protective Fencing be installed on site in advance of any other operations.

## Method

1. Remove existing surface vegetation with the use of hand tools and equipment only. Vegetation can be pre-treated with a contact herbicide e.g. *glyphosate* in advance of clearance works. Any ground irregularities can be made up with an application of clean, sharp sand.

2. Lay a semi-permeable geo-textile separation membrane e.g. *Treetex T300* / *Fibretex F4M* within the full extent of the construction zone to prevent contamination of the subsoil.

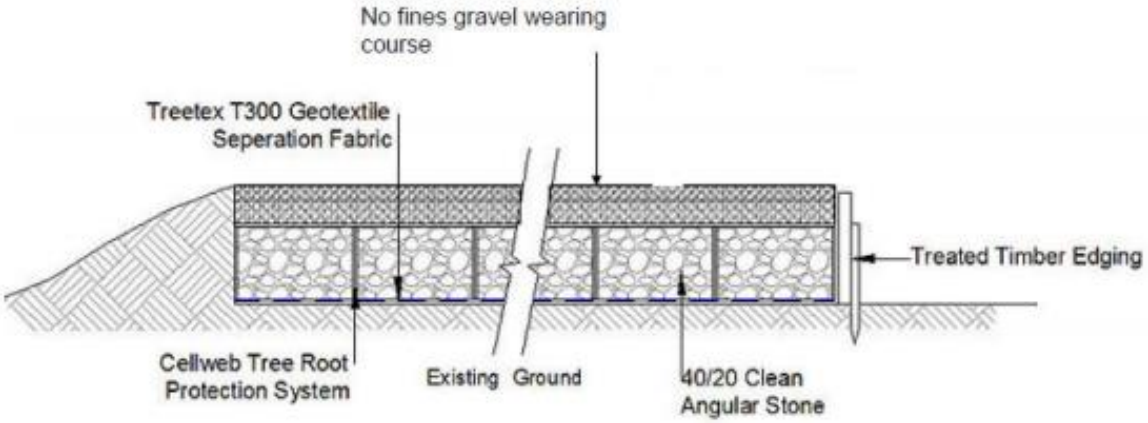
3. Install 200mm deep tanalised edging boards fixed and secured using 16mm dia metal pegs driven into the ground at 900mm intervals.

4. Install a 150mm deep 'geo-grid' cellular root protection system e.g. *Bodcell*, *CellWeb* or similar within the board edges, this should then be filled with clean angular stone 20 – 40mm no fines.

5. Infill should be lightly compacted and installed progressively so that machinery only moves on the sub-base. It must not be capped with impermeable materials. Employment of a geo-grid system will ensure that downward forces of access vehicles are spread laterally reducing loads in the underlying soils.

6. A permeable wearing course of decorative gravel can be used to dress the area. This should remain permeable and not contain any fines.

7. Kerbs and concrete haunching should not be employed for this method of construction and no excavations / service trenches are allowed are to take place within the footprint of the construction zone described above.




Typical Cross Section Showing No-Dig Method of Construction