



ARBORICULTURAL METHOD STATEMENT (HEADS OF TERMS)

Tree works
All tree works recommended with the proposal will be carried out in accordance with BS 3998:2010 Tree work - Recommendations prior to any construction machinery arriving on site. Once completed, installation of protective barriers and temporary ground protection will take place immediately.

Protective Barriers
Protective barriers will be installed in the locations specified on this drawing prior to any works starting on site. There are two types of fencing specified; the default fencing which is required for areas of highest demolition and construction intensity and risk to trees, and the above ground stabilising system for less intensively used areas of the site.

Temporary Ground Protection
Where specified, temporary ground protection will be installed in accordance with this drawing. The intention is to protect roots and soil from potential compaction damage where the installation of a barrier would be impractical for demolition and construction activities. The specification will be suitable to withstand the vehicle or pedestrian loads to be used in these areas as follows:

Pedestrian use only:
Ground protection to consist of single thickness scaffold boards placed on top of a compressible resistant layer of 100mm of woodchip laid onto a geotextile membrane.

Pedestrian operated plant - Machinery gross weight limited to 2 tonne.
Ground protection to consist of proprietary interlinked ground protection boards placed on top of a compressible resistant layer of 150mm of woodchip laid onto a geotextile membrane.

Wheeled or tracked construction traffic exceeding 2 tonne gross weight
Ground protection to consist of proprietary linked mat systems or pre-cast reinforced concrete slabs to an engineering specification designed in conjunction with arboricultural advice to accommodate the likely load to which it will be subjected to.

Specialist Foundation Construction
Foundations within the root protection area of trees will be constructed only using special engineering solutions which will avoid significant root pruning, methods such as piles and suspended ground beams or slabs will be used. Appropriate design for the site conditions will be specified by an engineer in liaison with an arboriculturist. Any excavations in existing built footprints will not exceed the existing building footprint or depth of existing footings.

No-Dig Construction
Where no-dig construction is specified on this drawing the method of construction and installation will retain existing ground levels, any existing vegetation sprayed and hollows filled with sharp sand to create a level finish. The use of a load bearing three dimensional system with a permeable surface, and low impact kerb edging will be used to avoid soil compaction and potential damage to tree roots and stems. Appropriate tree root protection systems are available from www.geosyn.co.uk or www.terram.com and this should be installed only by the manufacturer to ensure it is effective. Reference should be made to BS5837(2012) section 7.4 and Arboricultural Guidance Note 12 'Use of Cellular Confinement Systems Near Trees' (www.trees.org.uk)

Underground drainage and services
Drainage and services installation will avoid the root protection area of trees, where this is unavoidable the approach to install will follow NJUG (2007 Volume 4, Issue 2). All manholes must avoid root protection areas entirely.

Excavations and Root Pruning
All excavations within root protection areas will be carried out under arboricultural site supervision. Prior to commencement, the extent of excavations will be marked out by the contractor with spray paint. No excavations will extend beyond these defined areas or the specified depths and the site contractor will be responsible for ensuring all ground workers are made aware of these limits. Exposed roots will be pruned making a clean cut with a sterilised handsaw, or secateurs to clear roots to the construction depth required. Where small diameter roots occur in clumps these will be retained and moved out of the way of construction where practical. All exposed pruned roots will be immediately wrapped in wet hessian to prevent desiccation and to protect against extreme temperature fluctuations. On completion of the excavations works the hessian will be removed and all pruned roots covered with good quality top soil. No machinery will be permitted within the RPA of the trees during these works.

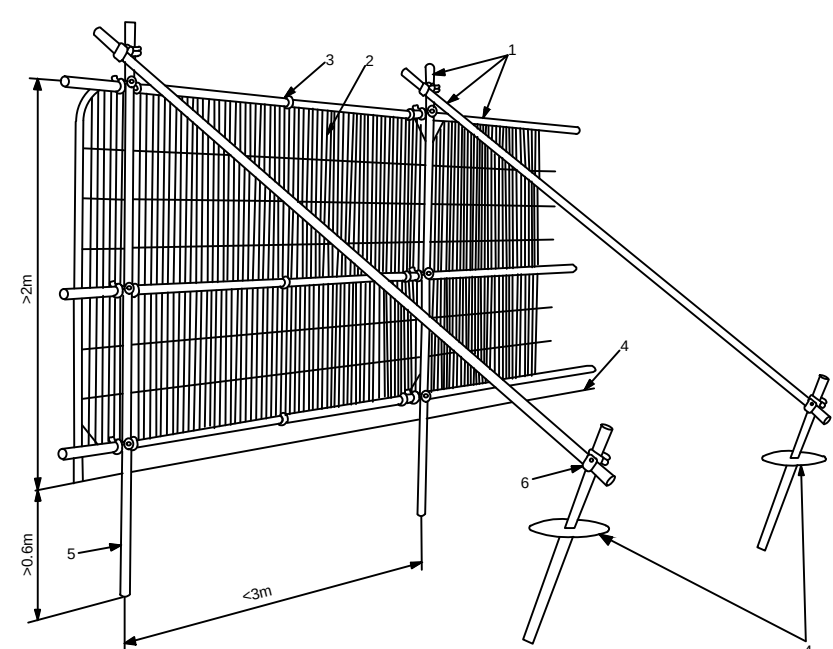
General Tree Protection Measures

- No construction or demolition works will take place within any protection zone identified on this drawing. Barriers and ground protection will remain intact and in position until works on site are completed, no alterations will take place without consulting the project arboriculturist beforehand
- No chemicals will be used within 3m of a tree, including hazardous material, cement or other toxic materials

Supervision of Works
Once protection measures as specified on this drawing are in place, the project arboriculturist will be notified and a site visit will take place to approve the installations are fit for purpose. Site operations can commence once this has been approved.

Ongoing site visits by the project arboriculturist will take place at intervals to ensure that tree protection measures are adhered to for the duration of the project works on site.

Protective Fencing Specification



- Key**
- 1 Standard scaffold poles.
 - 2 Heavy gauge 2m tall galvanized tube and welded mesh infill panels.
 - 3 Panels secured to upright and cross-members with wire ties.
 - 4 Ground level.
 - 5 Uprights driven into the ground until secure (minimum depth 0.6m).
 - 6 Standard scaffold clamps.

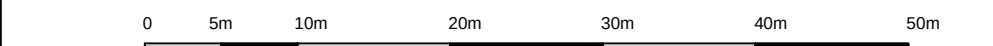
BS5837:2012 Tree Categorisation

- A Category**
Trees of high quality with an estimated remaining life expectancy of at least 40 years
- B Category**
Trees of moderate quality with an estimated life expectancy of at least 20 years
- C Category**
Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm
- U Category**
Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

Key

- Root Protection Area (RPA)**
The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the trees viability. Where the tree is ancient the RPA follows Natural England Standing Advice 2022.
- BS 5837 2012 Default weldmesh specification for protective barrier.** Where already in situ, existing fencing can be used as a barrier provided it is fixed and not possible to be moved.
- Construction exclusion zone, no entry by personnel or machinery permitted**
- No-dig construction permeable hard surface to be installed by manufacturer**
- Areas of specialist demolition or construction approaches, to be carried out in accordance with an agreed arboricultural method statement under site supervision by an appointed arboricultural consultant**
- Blue structure is the proposed railway sleeper edges to prevent gradient backfill soil covering stems of trees. The soil level inside the sleepers will be retained as existing. Refer to PEP details for specification of railway sleeper construction**
- Soil 1:3 gradient to consist of a high permeability medium composed of medium coars sand with 2-5% clay and 4-5% organic matter.**

Do not scale from this drawing, tree positions and dimensions should always be checked on site. The original of this drawing is in colour, do not rely on monochrome versions. This drawing is copyright Tracy Clarke Tree Consultancy Ltd. ©



Date	Revision	Description

Title
Tree Protection Plan and Method Statement - North

Client
PEP

Site
Bubb Lane Cycleway, Horton Heath, SO30 2ND

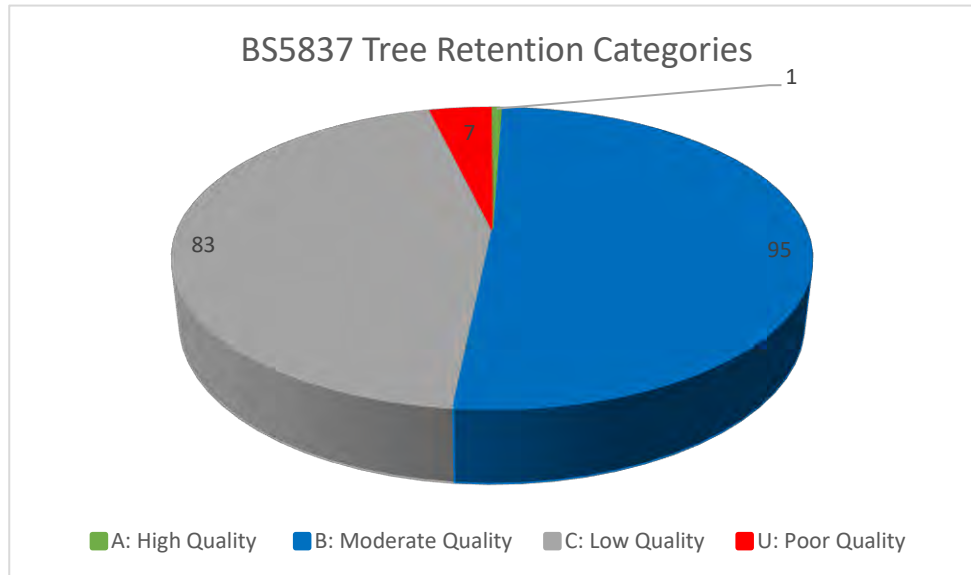
Ref: TCTC-18999-PL-03-01	Rev: -	Scale: 1:500 @ A1
Status: Planning	Date: March 2024	Drawn By: KM



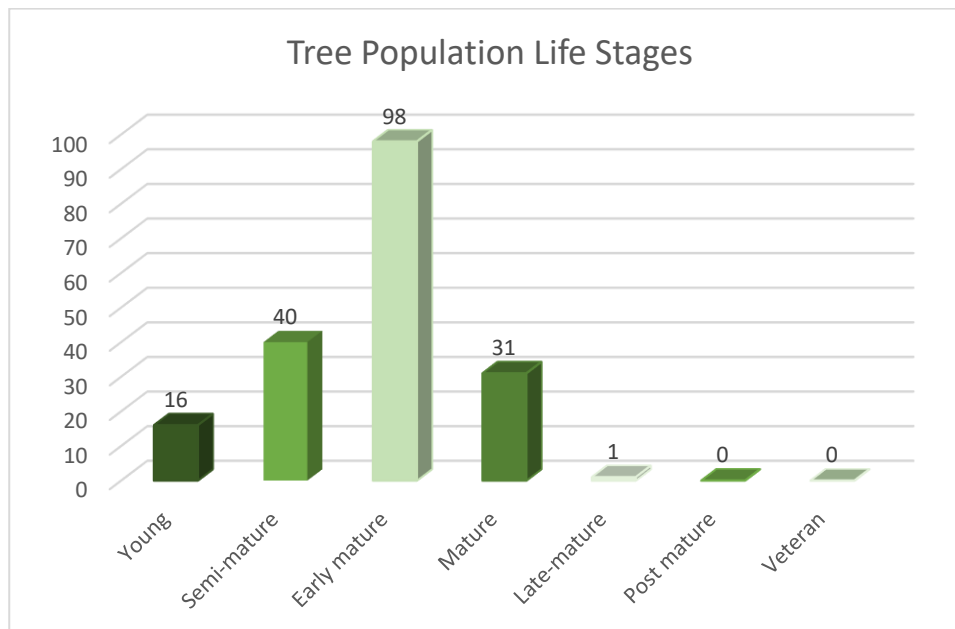
Appendix C – Tree Data Analysis

BS5837 (2012) quality and value of the tree population

A total of one hundred and forty-eight trees and thirty-eight groups are included in the survey



Age Diversity



Appendix D – No-Dig Construction

CI/SfB

Common Arrangement R12

Uniclass
L81208/L81210

CellWeb™



Tree Root Protection System



Geosynthetics

CellWeb™

Tree Root Protection System



The CellWeb™ TRP cellular confinement system protects tree roots from the damaging effects of compaction and desiccation, while creating a stable, load-bearing surface for vehicular traffic.

CellWeb™ offers an alternative to the traditional methods of constructing roadways and building foundations that involve excavation, which can result in tree root severance and soil compaction from the passage of vehicles. Such damage can severely influence tree health, and in extreme cases leads to death. CellWeb™ can be sensitively installed close to and under the canopies of trees without negative effects.

Trees are valuable landscape features and a vital environmental resource. Increasingly, contractors are being required to ensure the health and survival of trees during and beyond the construction period. Although this is enshrined in BS 5837: Trees in Relation to Construction: Recommendations (2005) and Tree Preservation Order legislation, it presents several issues when implementing construction projects near to trees:

- Root severance caused by excavation, leaving trees open to decay, less stable and with a diminished capacity to utilise soil water and nutrients.
- Destruction of soil structure and compaction due to the passage of heavy vehicles, restricting the flow of water and air to tree roots.
- Need for construction access, new roadways and hard surfaces that require engineering-standard load-bearing foundations that meet building regulations.
- Need for high-performance, cost-effective driveways and roadways in the vicinity of tree roots.



Potential loss of existing tree due to poor construction techniques.

The CellWeb™ system overcomes these issues and helps contractors to comply with tree health guidelines by creating a load-bearing base that is water-permeable, stable and durable.

With no need for excavation, the system is quick and easy to install, reducing construction time and saving costs and making it suitable for temporary and permanent solutions.



Glynebourne Wood.

Pedestrian path to recreational woodland built using a CellWeb™ foundation which was covered with DuoBlock and then filled with woodchip to create a porous surface.

Product features



CellWeb™ comprises an expandable cellular mattress that is then filled with a clean stone sub-base and above a Treetex T300 Geotextile.

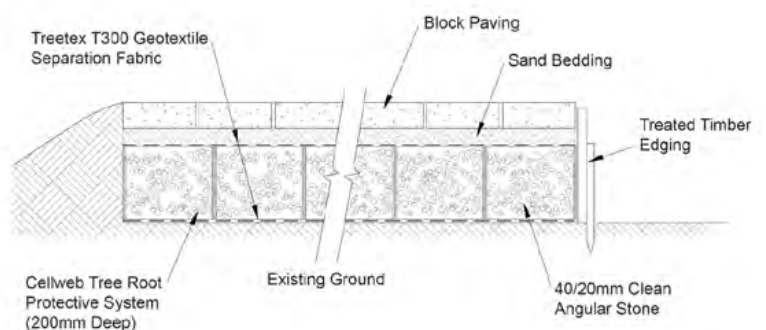
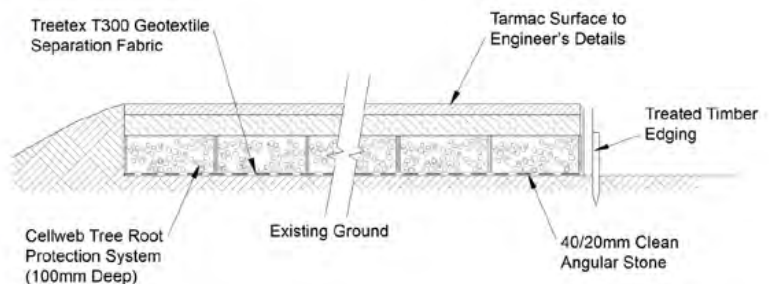
The honeycomb-like structure is made of robust high-density polyethylene (HDPE) that is simply stretched out and filled with clean angular material. Just like traditional roadways, the strength of the structure comes from the binding together of the infill, but with CellWeb™ this is achieved without compaction and without reduction in permeability.

Perforated cell walls allow the angular infill to bind with the contents of the adjacent cell, but with sufficient space for the movement of water and air to nearby tree roots. As the infill contains no fines and the geotextile layers prevent clogging from particles washing into the system, the structure remains permeable to water over time and protects the roots for the lifetime of the tree.

As well as being quick and easy to install, CellWeb™ also dramatically cuts down the depth of sub-base required, in most cases by as much as 50%, further reducing costs. CellWeb™ significantly reduces surface rutting, increasing the long-term performance of the finished surface and ensuring that tree roots remain protected from vertical loads.

CellWeb can be used as a permanent solution or alternatively the system can be used in a temporary situation. In a temporary application the system can be used for the required period of time, then removed for use on another site or recycled, thereby adding to CellWeb's green credentials.

- No excavation – Soil structure remains undisturbed; risk of root damage minimised.
- Porous infill – Allows tree roots to conduct moisture and gas exchange.
- No compaction – No need to compact the infill to achieve a load-bearing structure.
- Lateral stability – Structure remains rigid to vertical loads.



**Please call
01455 617 139**

or email sales@geosyn.co.uk
for further information.

Wide
product
range

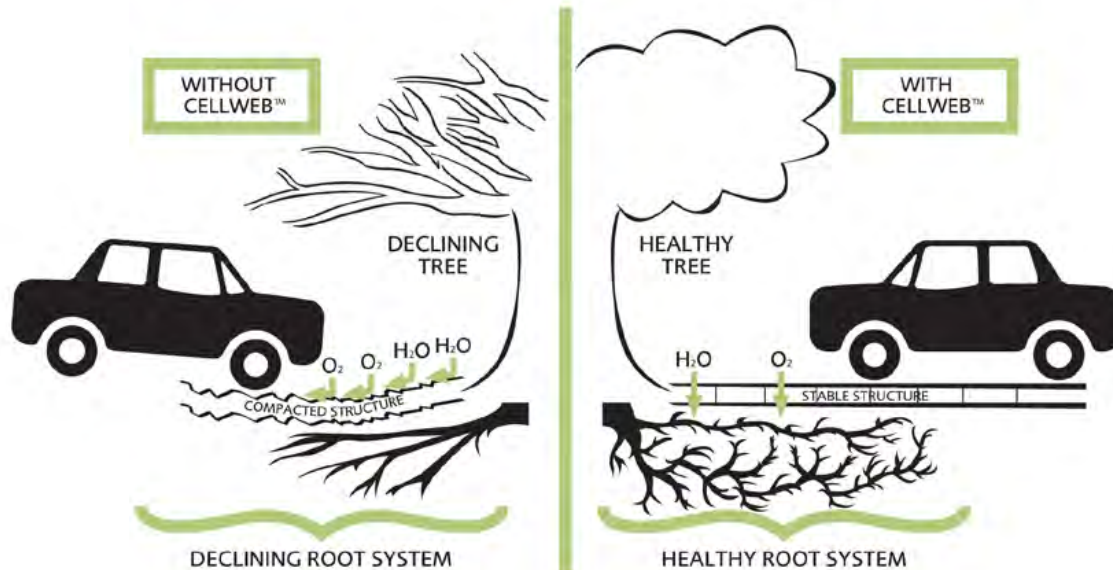
Large
stock
holding

Next day
delivery

Hydrological benefits

Water is a shrinking resource in the urban environment. As the extent of the built environment increases, more and more ground is being covered by impermeable hard surfaces that repel rainwater runoff, preventing it from reaching the roots of vegetation, and in particular trees. Rapid water runoff stretches the capacity of stormwater drains and frequently results in drainage management issues that are rarely resolved in favour of adjacent trees.

Using CellWeb™ mitigates these issues by promoting both the vertical and the lateral movement of water, whether the system is installed above or below ground. The 'pores' that are created by the spaces between the infill stones and the cell perforations even allow water to flow to adjacent tree roots that are effectively 'trapped' under areas of impermeable hard standing. CellWeb™ therefore helps to promote root growth and allows roots to continue to grow within areas of hard surfacing.



Design
service

Onsite
support



Geosynthetics



Design & installation

Final surfacing

The benefits of the CellWeb™ system to trees can only be maintained if a suitably porous final surface is selected. An ideal surfacing is the DuoBlocks grass reinforcement and gravel retention system, a visually attractive surface that has the advantage of being fully porous. Alternatives include block paviers, porous asphalts and loose or bonded gravel.

Call the Geosynthetics sales team on 01455 617 139 for more advice on surfacing options and other products and systems.

Advice and product selection

Geosynthetics Limited has been supplying the CellWeb™ system for many years and has acquired solid experience in its application. No two contracts are the same, and we understand the factors that need to be taken into account to specify the right CellWeb™ product.

We provide a FREE consultation, design and advisory service to find the solution that is most cost-effective and beneficial for your site. Our service includes product selection, CAD drawings and full instructions to help you from project conception to completion.

Call our sales office on 01455 617 139 for specification details and project-specific design assistance.

CellWeb™ in action:

Access road for the Lake District National Parks Authority.



Site before construction pictured above.



Installation of the CellWeb™ system.



Four years later.

Technical specification

Product Specifications

Properties	Standard Cell
Material	Virgin HDPE
Wall thickness	1.25mm
Seam welding	Ultrasonic to 100% of seam length
Cell depth	75, 100, 150, 200 and 300mm
Width of expanded panel	2.56m
Length of expanded panel	8.1m
Cell diameter (expanded)	259 x 224mm

Certified Quality

CellWeb™ is manufactured in accordance with the ISO 9001 Quality Management System in a comprehensive range of cell diameters and depths.



Geosynthetics Ltd



Geosynthetics

Geosynthetics Limited

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Appendix E – Qualifications

I am a Registered Chartered arboriculturist with the Institute of Chartered Foresters, a Fellow of the Arboricultural Association, a Chartered Environmentalist, and I have a Postgraduate Diploma in arboriculture and community forest management from Middlesex University, and a Higher National Diploma in arboriculture and I have over twenty five years' experience in the field of arboriculture.

Tracy Clarke MICFor. F.Arbor.A. CEnv



Excellence in Arboriculture



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