



WE KNOW SERVICES

ARBORICULTURAL METHOD STATEMENT

Site

Prescot to Cronton Cycleway – Phase Eight

Client

Knowsley Metropolitan Borough Council

Report Date

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Version

Forth Issue

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Arboricultural Method Statement – Prescott to Cronton Cycleway Phase Eight



An image of the eastern side of the site.

Quality Assurance

The information which the author has prepared and provided is true and has been prepared and provided in accordance with the Arboricultural Association's Code of Ethics and Conduct. We confirm that the opinions expressed within this report are true and represents the author's professional opinions.

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Table of Contents

1. Introduction	1
2. The Importance of Protecting Tree Roots from Development Related Activities	1
3. Method Statement	2
3.1 Tree Works	2
3.2 Tree Protective Fencing.....	2
3.3 Methodology for the Cellular Confinement System Installation within RPAs	3
3.4 Tree Planting	3
3.5 Additional Precautions When Working in Proximity of Trees.....	4
Appendix 1.0 Tree Protection Plan.....	5
Appendix 2.0 Tree Fencing Specification	7
Appendix 3.0 Cellweb TRP Documentation	9

1. Introduction

Resulting from the Arboricultural Impact Assessment (ref: 22/00011/AIA/P8), an Arboricultural Method statement has been recommended to ensure good working practices when working in proximity to trees to implement the proposed development.

The need for this method statement is a result of the client's proposals (ref: 60629784-SHT-30-PCP8-CT-0101-0113 (Blinded Copy)) as outlined in the Arboricultural Impact Assessment.

The following information outlines the need for an Arboricultural Method Statement.

2. The Importance of Protecting Tree Roots from Development Related Activities

Most of the root system of a tree is in the top 600mm of the soil, extending radically for distances frequently more than the trees height. Beyond the main structural roots, the root system rapidly sub-divides into smaller diameter roots until a mass of fine roots develops.

The main structural roots develop in response of the need for the tree to have physical stability. Beyond these major roots, root growth and development are influenced by the availability of water and nutrients.

Unless conditions are uniform around the tree, the location and extent of the root system is typically irregular and difficult to predict. Typically, it will not reflect the symmetry seen in the branch system.

The parts of the root system, which are active in water and nutrient uptake are very fine, typically less than 0.5mm diameter. They are short lived and develop in response to the needs of the tree, with the majority dying each winter.

It is essential that conditions in the soil remain conducive to the healthy growth of these fine roots so that the water and nutrients necessary for healthy tree growth can be absorbed.

All parts of the root system, but especially the fine roots, are vulnerable to damage. Once they are damaged, water and nutrient uptake will be restricted until new roots have regenerated. Vigorous young trees will be capable of rapid regeneration, but over mature trees will respond slowly, if at all.

To live and grow, roots need oxygen from the soil. Respiration by the roots and other soil organisms depletes this oxygen and increases carbon dioxide levels in the soil; a correct balance of these gases is normally maintained by diffusion between the soil and the atmosphere. Anything, which disturbs this balance, will affect the condition of the root system.

The factors that most commonly affect this diffusion adversely, and therefore damage roots, are the following: -

- A. Compaction of the ground, which reduces the space between soil particles. This is particularly important on clay soils. A single passage by heavy equipment on clay soils or storage of heavy materials can cause significant damage to the structure of the soil.
- B. Altered soil levels, even for a few weeks.
- C. Covering the root area with impervious surfaces.
- D. A rise in the level of the water table. Roots can tolerate submersion for short periods. But a permanent rise will deplete the soil of oxygen.
- E. Excavations in the rooting area can sever roots. As most roots are in the surface 600mm, even shallow excavations can cause damage.
- F. Excavations for foundations, landscaping, service trenches or soil stripping which sever or damage the roots may impair the stability of the tree and make it dangerous.

Serious damage is often caused during preliminary site works by stripping the topsoil. For this reason, such works should be avoided until protective fencing has been erected.

3. Method Statement

3.1 Tree Works

Before any form of development commences on the site the following works should be undertaken: -

Tree No.	Proposed Works
G1, T5, T14, G16D, G16E	Remove trees as detailed on plan
S2	Grind stump to ground level

3.2 Tree Protective Fencing

All fencing used on the site should fully comply with BS 5837:2012 (Trees in Relation to Construction – Recommendations), refer to Appendix 2.0 for specifications.

The fencing should be strong and suitable for local conditions. It should also consider the degree of construction activity on the site.

The fencing should be at least 2.3m in height and should be erected with both a vertical and horizontal scaffolding framework capable of withstanding impact, with vertical tubes

spaced at a maximum of 3 m. This should support either weldmesh panels which should be securely fixed with wire or scaffold clamps.

Notices should also be erected on the fencing stating 'Protected Area - No operations within fenced area'.

The positioning of the protective fencing is also very important and should be erected in the proposed location identified in Appendix 1.0. Once the fence has been erected it should never be crossed and particular care should be taken to store any materials or soil within the protected area.

Where it is demonstrated that there is a presence of underground services, an alternative arrangement is acceptable using boots to support the vertical sections of the fence and a stabilizer strut mounted on a block tray.

3.3 Methodology for the Cellular Confinement System Installation within RPAs

The following methodology supports the drawing indicating the construction of the horse holding areas within the RPAs of G3 and G16. This work should be carried out as soon as possible to prevent any long-term damage to the root systems. Further plans should be made and consulted by an engineer for the final details of the system.

Please refer to *Appendix 3.0* for the full methodology.

3.4 Tree Planting

Trees and shrubs planted shall comply with *BS 3936 Specification of Nursery Stock* and shall be planted in accordance with *BS 4428 General Landscape Operations* and *BS8545:2014 Trees from Nursery to Dependence in the Landscape*.

All imported soils should be uncontaminated and from a recognised supplier in accordance with *BS 3882:2015 Specification for Top Soil*.

Bare root and root-balled stock to be planted in the dormant season (which typically extends between from mid-November to late-March). All planting stock to be clearly labelled on delivery with the full botanical name.

Tree pits to be dug 400mm larger than rootball in any direction. Organic soil improvement compost to be dug into all planting areas and used at 1m³ per 10m². All planting beds to be mulched in 75mm depth medium grade bark mulch immediately after planting.

3.5 Additional Precautions When Working in Proximity of Trees

Oil, bitumen, cement, or other material likely to cause damage to the tree will not be stacked or discharged within 10m of the trees stem or within the protective area. Also, materials in general will not be stacked or discharged within the exclusion zone.

Concrete mixing and washing will not be carried out within 10m of any retained trees.

Fires will not be lit beneath the foliage or in a position where the flames could extend to within 5m of the foliage, branches, or trunk. If the fire is large, then this may necessitate a distance of at least 20m.

Trees that are to be retained will not be used as anchorage for equipment.

Notice boards, telephone cables, or other services will not be attached to any part of the retained tree.

Care should be taken when using cranes or other equipment near the canopy of the retained trees. Also, any trees to be felled in proximity to the retained trees should be done so with particular care.

Appendix I.0 Tree Protection Plan

OF PHASE 7 (DESIGNED BY OTHERS).

NO 85th PERCENTILE SPEED ANALYSIS RESULT
INFORMATION IS AVAILABLE AT THIS TIME.

THE ROAD IS CURRENTLY NATIONAL SPEED LIMIT AND
THEREFORE, IT IS NOT POSSIBLE TO KNOW THE 85th
PERCENTILE SPEED FOR WHEN THE ROAD IS CONVERTED
TO A 30mph SPEED LIMIT. IF THE ROAD CAN BE
CONSIDERED TO BE 30mph FOR THE 85th PERCENT
SPEED, THEN FORWARD VISIBILITY IS ACHIEVED.

PROPOSED ROAD MARKINGS AND
NEW PROTECTION SUBSTRUCTURES TO
BE INSTALLED TO REDUCE SPEED
REDUCTION WORKS OF 3000mm
TO 1000mm (SEE DRAWING 22/00011/TPP-8/C)
(SEE PREL. DATE 22/09/2022)

NEW SHARED USE AREA - FLEXIBLE - TYPE B
FULL CONSTRUCTION
• 200mm AC 6 DEGREE SLURP 100/100
• 100mm AC 20 DEGREE SRS 100/100
• 200mm SUB-BASE TYPE 1 UNBOUND MIX

TSM CHAPTER 6
MINIMUM VISIBILITY DISTANCE OF CROSSING
SET OUT IN TABLE 15-1:
30mph (85th PERCENTILE SPEED) = 40m

NEW HORSE HOLDING AREA -
FULL CONSTRUCTION
• 400mm ELEPHANT SLURP AD 1750
OR EQUAL APPROVED
• 200mm SUB-BASE TYPE 1

NEW SHARED USE AREA - FLEXIBLE - TYPE B
FULL CONSTRUCTION
• 200mm AC 6 DEGREE SLURP 100/100
• 100mm AC 20 DEGREE SRS 100/100
• 200mm SUB-BASE TYPE 1 UNBOUND MIX

Drawing Section A

Drawing section A

Drawing section B

Drawing Section B

Drawing section A

Drawing section B

Drawing Section C

Drawing section B

Drawing section C

Drawing Section C

- Retained Trees
- Trees to be Removed
- Root protection area
- Cellweb TRP

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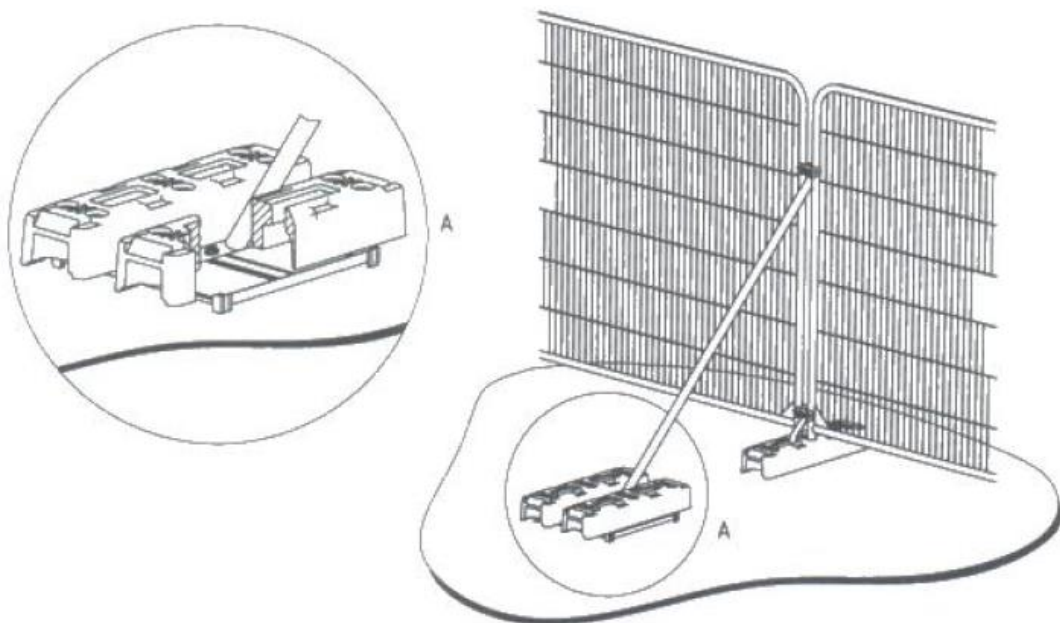
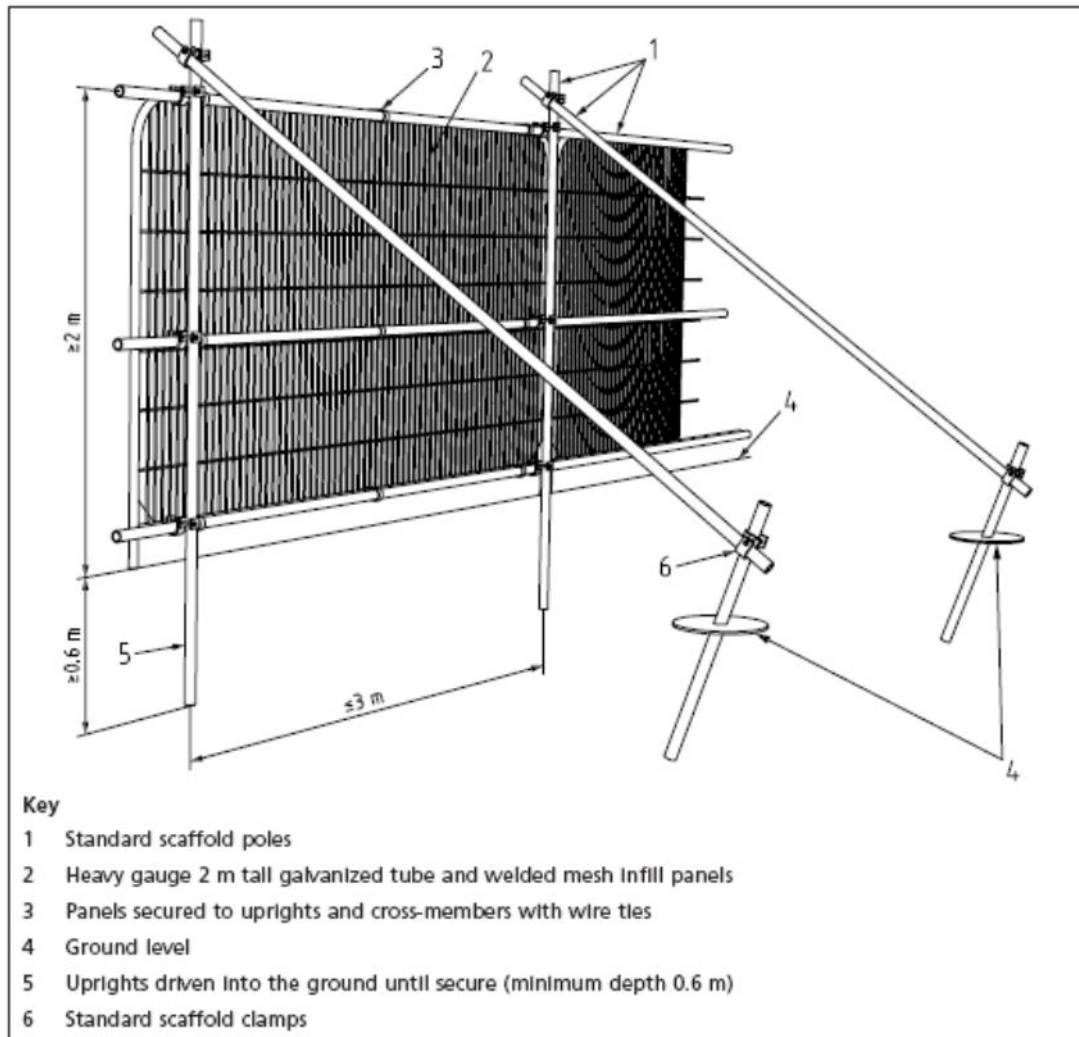
Site Address:
Prescot to Cronton Cycleway
Phase Eight

Drawing Title: Tree Protection Plan
Drawing No: 22/00011/TPP-8/C
Date: 21/09/2022
Scale: 1:500@A1
Drawn by: JH

Note: Dimensions are not to be scaled from this drawing.
All written measurements are to be checked on site by
the contractor. Copyright WeKnow Services.
Note: All rights described in Chapter IV of the Copyright
Design & Patents Act 1988 have generally been asserted.

Appendix 2.0 Tree Fencing Specification

Arboricultural Method Statement – Prescott to Cronton Cycleway Phase Eight



b) Stabilizer strut mounted on block tray

Appendix 3.0 Cellweb TRP Documentation

Cellweb® TRP Installation Guide



Step 1: Prepare Surface



Step 2: Lay out Treetex™



Step 3: Lay out Cellweb® TRP

- Cellweb® TRP is a NO DIG tree root protection measure and it is recommended that no excavation be performed without prior approval and guidance from the Local Authority Arboricultural Officer.
- Soil compaction from vehicles, machinery and materials is to be strictly prohibited during construction within Root Protection Areas (RPAs).
- Approval must be obtained from the Local Authority that the design and the method of construction is acceptable.
- Further information is available from the following two documents;
 - British Standard BS5837: 'Trees in Relation to Design, Demolition and Construction' (2012).
 - Arboricultural Advisory and Information Service: Practice note 12 – 'Through the Trees to Development' (APN12).

Installation Method

1. Prepare the Surface

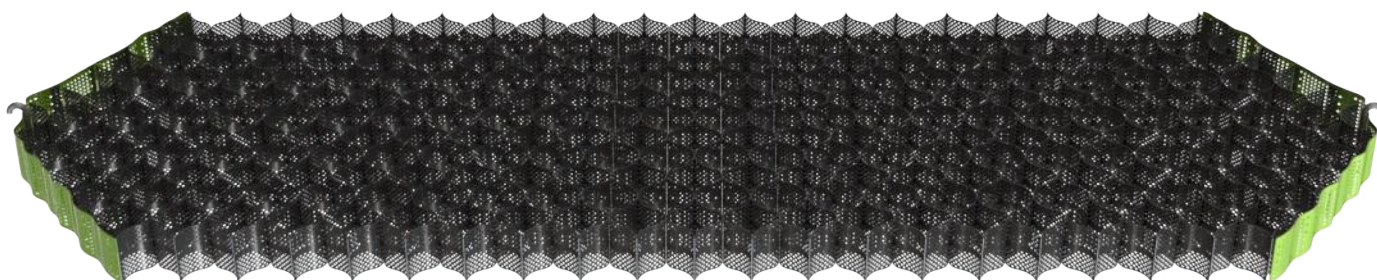
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

2. Lay out the Treetex™ Non-Woven Geotextile

- Lay out the Treetex™ over the prepared area, overlaying the edges of the required area by 300mm.
- Overlap any joins by 300mm minimum or more, depending on soil structure (see Note 2).

3. Lay out the Cellweb® TRP Cellular Confinement System

- Lay out the collapsed Cellweb® TRP on-top of the Treetex™.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.



Cellweb® TRP - Installation Guide

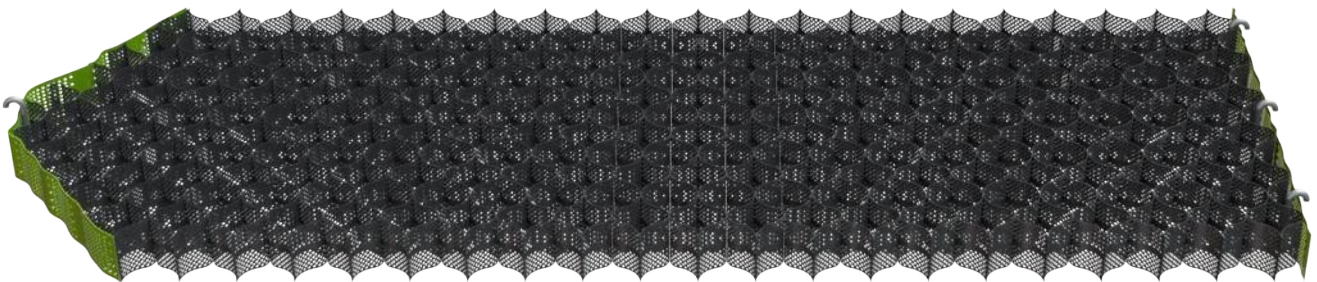


Step 3: Pinning Cellweb® TRP

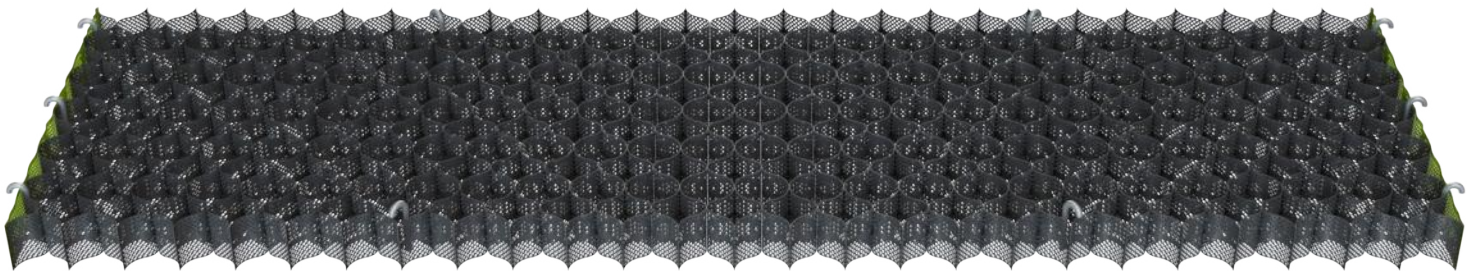


Step 3: Stapling Cellweb® TRP

- Pull out the Cellweb® TRP to its full 8.1m length and secure its length with another J pin.



- Now measure its width to 2.56m and secure in each of the corners with the J pins.
- Use 10 pins per panel to create a panel measuring 8.1m x 2.56m.



- This will produce a cell size of 259mm x 224mm which is the required cell diameter. Each cell must be fully extended and under tension.
- Staple adjacent panels together at each cell (see Note 3).
- If a curved path or shape is required, this should be cut when the Cellweb® TRP panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. Do not try to curve or bend the Cellweb® TRP panels into place.
- All cells must be fully opened to the required diameter.

Cellweb® TRP - Installation Guide



Step 4: Clean Angular Stone



Step 5: Edge Restraints



Step 6: Surface Options

4. Infill the Clean Angular Stone

- The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm (see Note 4).
- Do not use M.O.T type 1 or crushed stone with fines for tree root protection.
- Infill the Cellweb® TRP cells with the clean angular stone, working towards the tree and using the infilled panels as a platform.
- Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction.
- Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.
- If the clean angular stone is being used as the final surface; regular maintenance will be required to ensure a minimum overfill of 50mm.

5. Edge restraints

- Excavations for kerbs and edgings should be avoided within the RPAs.
- Where edging is required for footpath and light structures, a peg and treated timber board edging is acceptable
- Other options include wooden sleepers, kerb edging constructed on-top of the Cellweb® TRP system, plastic and metal edging etc.

6. Surface options

- All surfaces in Root Protection Areas must be porous. Surfaces can include block paving, asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete etc.

NOTES

- 1. Herbicide:** According to BS5837:2012 "The use of herbicides in the vicinity of existing trees should be appropriate for the type of vegetation to be killed, and all instructions, warnings and other relevant information from the manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced, and existing sensitive habitats, particularly those associated with aquatic or drainage features."
- 2. Geotextile:** We recommend the installation of a Treetex™ under the Cellweb® TRP, or under the sub-base, if installed. The overlapping between adjacent rolls of Geotextile should be: CBR > 3%: 300mm minimum, CBR between 1% and 3%: 500mm minimum. CBR ≤ 1%: 750mm minimum.
- 3. Staples:** Number of staples per join: 200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples.
- 4. Granular Fill:** Open graded sub-base, clean angular stone Type 4/20 or Type 20/40. Please refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material.

