

Proposed Tree Protection Method Statement
in support of the Planning Application for the

Proposed installation of a multi-use games area (MUGA)

At

The King's School
Lakesmere House
Allington Lane
Fair Oak
Eastleigh
SO50 7DB

On behalf of the applicant

Synthetic Turf Management Ltd

Prepared by

michael healy limited
architectural design + project management
m: 07952 114 756
t : 01704 514 751
e: design@michaelhealy.co.uk
w: www.michaelhealy.co.uk

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Tree Protection Method Statement

Sequence of Operations

Install Tree Protection Fencing

- a. Tree Protection Fencing will be installed in the locations shown on the Tree Protection Plan as agreed with the Local Planning Authority Tree Officer.
- b. The area between the Tree Protection Fencing and the trees will be a Construction Exclusion Zone (CEZ).
- c. Tree Protection Fencing will be constructed to specification described in Appendix 1. Final specification to be agreed with the Local Planning Authority Tree Officer.
- d. If tree roots are encountered during the erection of the fencing then uprights will be realigned to avoid damage.
- e. Site Notices will be securely fixed to the Tree Protection Fence panels (Appendix 1).
- f. There will be no movement of Tree Protection Fencing unless it is agreed with the Local Planning Authority Tree Officer.

Install temporary vehicle access to site of MUGA

- g. Temporary vehicle access will be provided across the playing field as shown on the Tree Protection Plan.
- h. Access will be constructed to specification described in Appendix 2 or equivalent approved.
- i. It is not envisaged that any access will be located within any tree RPA's. In the event that access is required within RPA's then the final specification shall be agreed with the Local Planning Authority Tree Officer.

Construction of new MUGA

- j. The MUGA has been positioned outside of the RPA's of the existing trees and outside of the 20m SINC buffer zone. No additional measures are envisaged being required.

Construction of new footpath

- k. Where the new footpath surface breach the Root Protection Areas as indicated on the Tree Protection Plan, installation will be carried out using a 'No-Dig' Cellular Confinement system such as 'CellWeb' or equivalent approved (see Appendix 3).

- l. The position of the footpath will be marked out on site. This area will then be cleared of vegetation and a general level created using hand tools and clean sand where necessary. A geo textile membrane will then be laid across the surface.
- m. The 'Cellular Confinement System' (CCS) will then be laid across the area. This will provide a load-bearing and permeable structure.
- n. Once the CCS is in place it will be backfilled with clean angular stone which will enable air and moisture to reach the roots and encourage healthy growth. A proprietary porous wearing course will then be applied as the finished surface. The edges of the MUGA surface will be retained using tannalised wooden retaining boards staked into the ground OR proprietary sports facility edging tapering down to the existing ground level with top soil.

Removal of Tree Protection Fencing

- o. Tree Protection Fencing and Ground Protection will only be removed after all major construction work is complete. Vehicular access will not be permitted within the Construction Exclusion Zones.
- p. The local authority tree officer shall be made aware that the fencing is to be removed.

General Precautions

- q. Welfare and site storage facilities will be positioned outside the CEZ's. The location will be agreed with the Local Planning Authority Tree Officer prior to commencement of the project.
- r. No materials that are likely to have an adverse effect on tree health will be stored or discharged within 10 metres of the trunk of a tree that is to be retained. Consideration will be given to the implications of storing materials upslope of this exclusion zone in order to avoid the risk of potential spillages leaching down-slope and contaminating the Root Protection Area of a tree.

Such materials include:

- Oil
 - Bitumen
 - Cement
- s. No fires will be lit unless the site of the fire is agreed with the Local Planning Authority Tree Officer and Kings School Estates Manager.
- t. In the event of unforeseen incidents occurring that may adversely affect or threaten the welfare or security of the trees, the Site Manager shall inform the Local Planning Authority Tree Officer at the earliest opportunity and not more than one working day following the incident and recommendations will be submitted for approval by the Local Planning Authority, initially verbally, and then in writing.

- u. A record of any emergency incidents and works shall be maintained by the Site Manager.

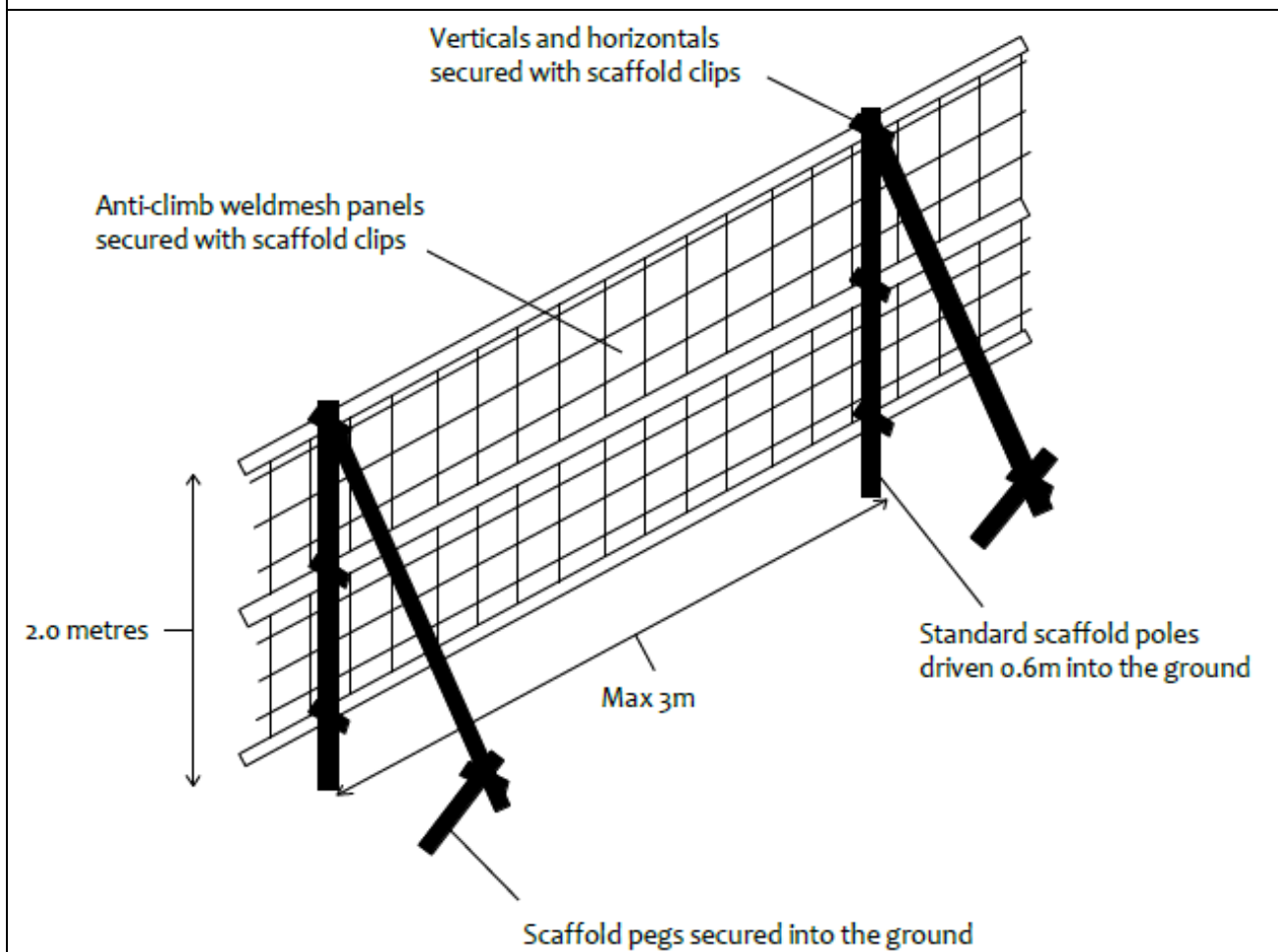
Incidents which may merit such contingency plans include:

- Accidental / unauthorised damage to the limbs, roots or trunk of trees
- The spillage of chemicals within or adjacent to a Root Protection Area
- The discharge of toxins / waste within or adjacent to a Root Protection Area
- The un-scheduled breaching of a tree protective barrier or Construction Exclusion Zone.

Appendix 1

The In-Ground System below shall be installed as indicated by the blue dashed line on the Tree Protection Plan – i.e. to the North West side of the MUGA between the MUGA and the existing trees which are located between the MUGA and the school buildings. It should be robust enough to withstand occasional knocks by plant machinery and, once installed, shall remain in place throughout the entire construction phase.

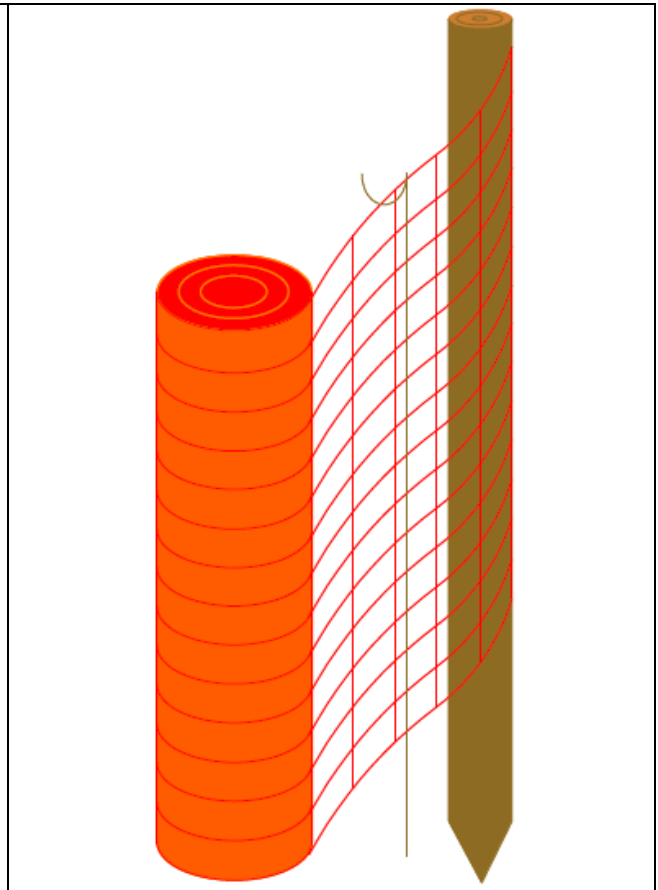
Vertical scaffold poles are driven into the ground, onto which are fixed horizontal scaffold poles and diagonal bracing struts. Weldmesh panels (or similar – e.g. Heras type fencing panels, or 18mm+ plywood boards) are secured to the scaffold framework using standard scaffold clips. The system is illustrated in the diagram below and is based on BS 5837 guidelines.



For all other areas it is proposed to install a less robust system because of the nature of construction activity, or its distance from tree protection areas. The purpose of such a system shall be to demarcate the protection zone. It is not intended that such fencing will withstand knocks by construction machinery.

In this system, high visibility plastic safety fencing, 1m high, minimum grade 140g/m², is secured onto alternate wooden posts and fencing pins. Wooden posts to be located at 5m intervals, minimum dimensions 75mm.

Final specification to be agreed with the Local Planning Authority Tree Officer.



Appendix 2

Ground-Guards

Bulletin

TREE ROOT PROTECTION DURING CONSTRUCTION PROJECTS

The Department for Communities and Local Government's guide "Tree Roots in the Built Environment" states that *"ground protection should be installed before any materials or machinery is brought onto the site"* (Section 9.3.3.2)

It has been shown that *"the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground"* (Section 4.2.3)

Thus it is essential that ground protection is specified and installed from day one of construction projects.

Failure to protect the ground from compaction will lead to reduced water and oxygen infiltration to the tree roots, and can ultimately lead to the decline of the tree.

The use of GROUND-GUARDS for tree root protection

The **Ground-Guards** temporary roadway system is frequently used on construction sites to protect the ground from erosion and damage by construction vehicles. **Ground-Guards** are usually installed as a roadway consisting of a parallel track of 2.4m x 1.2m panels with a 1.2m space in between. Where a temporary roadway must pass near to trees, the following extra precautions must be taken in order to provide cushioning for the ground under the tree canopy:

1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under the tree canopy, and preferably under the whole of the trackway.
3. A pad of Ground Guards, three boards wide should be laid on top of the geotextile membrane, between the timber rails.
4. A 150mm deep layer of wood chippings should be laid.
5. The twin trackway can then be laid so that it rises over the wood chippings as it passes under the tree canopy. Extra Ground-Guard boards should be installed in the gap between the twin trackway at this point to retain the wood chips in place.

Ground-Guards

Tel: 0113 267 6000

Fax: 0113 267 2222

Email: info@greentek.org.uk



Ground protection is essential to maintain the health of tree roots on construction sites.



Ground-Guard trackways should have additional cushioning installed where they pass near to trees.

- 200X50 timber rails
- 50X50X500 timber stakes
- Geotextile Membrane
- Base layer of Ground-Guards
- Wood Chippings
- Ground-Guard Trackway

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Michael Healy Ltd

Architectural Design + Project Management

m: 07952 114756 t: 01704 514751 e: design@michaelhealy.co.uk w: www.michaelhealy.co.uk

Appendix 3

PRODUCT DATA SHEET

Geosynthetics Limited Tel: 01455 617 139 Fax: 01455 617 140 Email: sales@geosyn.co.uk

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

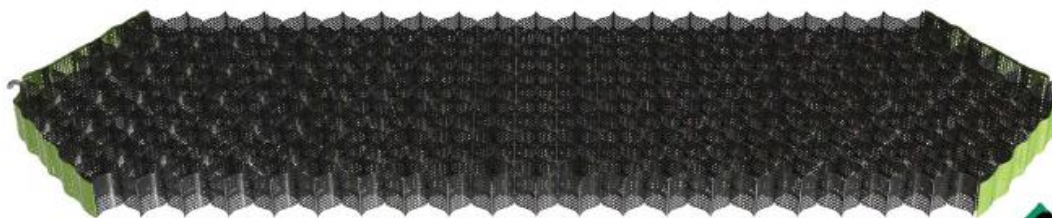
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

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.



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Michael Healy Ltd

Architectural Design + Project Management

m: 07952 114756 t: 01704 514751 e: design@michaelhealy.co.uk w: www.michaelhealy.co.uk

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Cellweb® TRP - Installation Guide

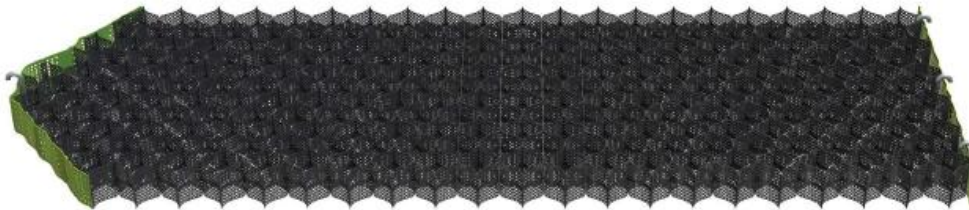


Step 3: Pinning Cellweb® TRP

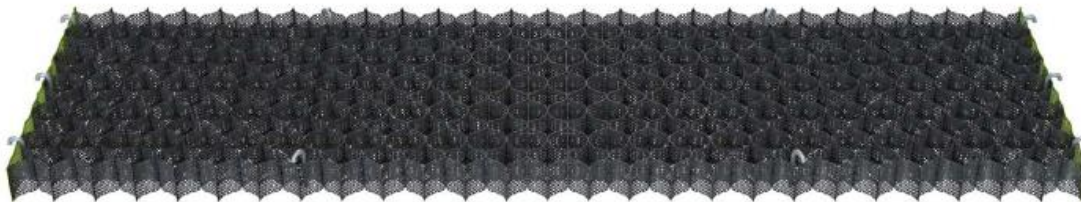


Step 3: Stapling Cellweb® TRP

- Pull out the Cellweb® TRP to its full 8.1 m 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.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction.

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

- Surfaces can include block paving, asphalt, loose gravel, grass and gravel retention systems (eg Golpla™), resin bound gravel, concrete etc.
- For Root Protection Areas this surface must be porous.

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.

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