

## Case Study

# Cellweb® TRP

## Woolton Fields Development, Liverpool



### Location:

Woolton Fields  
Liverpool

### Project Description:

The construction of a footpath linking the new Woolton Fields Development with Beaconsfield Rd.

### Technical Requirements:

To utilise a no dig construction, minimising soil compaction and maintaining water permeation and gas exchange.

### Consultant:



### Developer:



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## Local Authority Adopted Cellweb® Footpath

Woolton Fields Development, Liverpool

### Introduction

In 2017 Redrow Homes and Liverpool City Council embarked on the redevelopment of the Old Lower Lee School site on Beaconsfield Rd, Woolton, Liverpool. The site contained numerous high value trees which would be retained and incorporated into the new development. As part of the residential development, a footpath was required linking it to Beaconsfield Road. This footpath would later be adopted by Liverpool City Council.

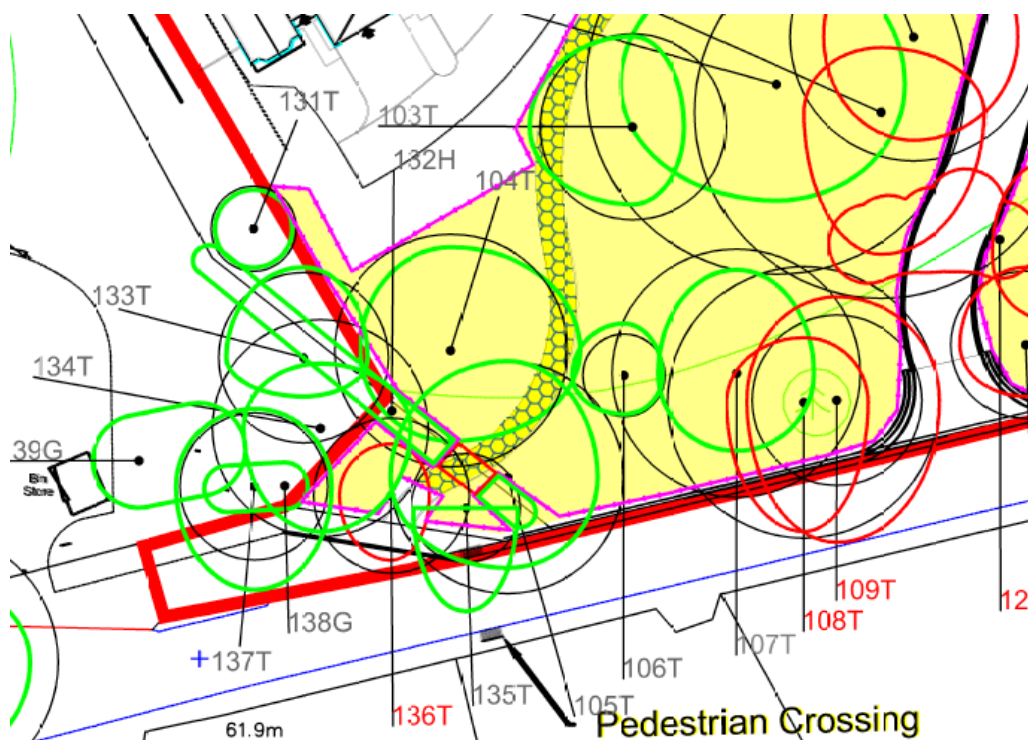


Figure 1 – Tree Protection Plan. Trevor Bridge Associates Landscape Architects

The proposed footpath layout can be seen hatched yellow in figure 1 above. It can be seen that the footpath passes through the root protection areas of retained trees 102, 103, 104, 105, 135 and hedge 132. To ensure the continued health of the trees and to comply with the arboricultural method statement, the path would be constructed using a no dig 3D cellular confinement system. At the request of Liverpool City Council, Trevor Bridge Associates Arboriculturalist and Redrow Homes' Design Engineer contacted Geosynthetics Ltd for a site specific recommendation for the required Cellweb® build up.

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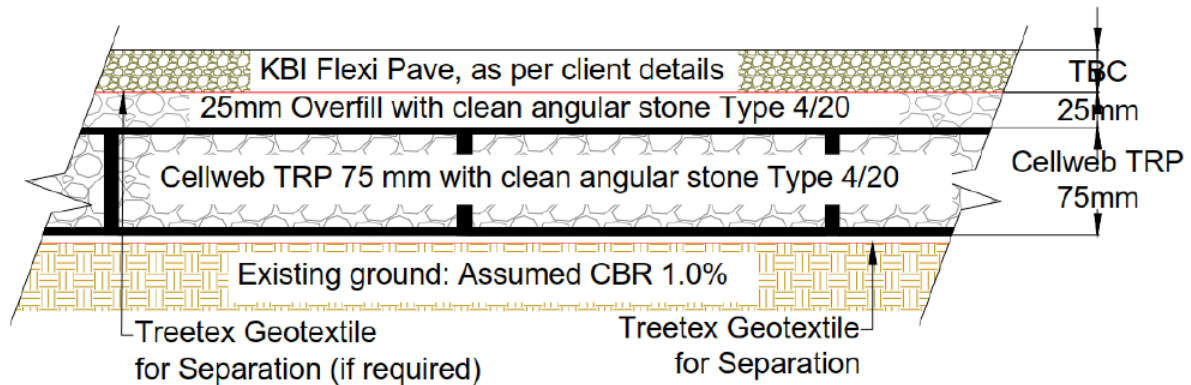


Figure 2 – Site Specific Recommended Build up. Geosynthetics Ltd

Geosynthetics engineers calculated the above recommendation using information provided by Redrow Homes. Recommendations are calculated using site California bearing ratios and proposed traffic loadings. The footpath would not receive loads above that of pedestrians and cyclists, and the 75mm Cellweb® was recommended. The Cellweb® is infilled with a 4/20mm clean angular stone and is overfilled by 25mm. This ensures that the tops of the cell walls are covered. The arboricultural method statement recommends a final wearing course of resin bound gravel which is a porous hard surface. The depth and application of the material was specified by suppliers KBI.

**Cellweb® TRP is the UK's market leading 3D cellular confinement tree root protection system. Cellweb® TRP offers a 'no dig' solution for sub base construction within root protection areas (RPAs), preventing root severance. Through the confinement of a clean angular infill material, the system ensures continued water permeation and gas exchange between the rooting environment and atmosphere. The system minimises increases in soil compaction through the lateral dispersal of point loads.**



Photo 1 – Installation of the Upper Section.



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Photo 1 shows the installation of the unsurfaced Cellweb® Subbase. Treated timber boards have been staked into the ground to provide a template and to edge the Cellweb® and the final surfacing material. Before laying the Cellweb®, low areas are infilled using clean angular stone. This provides a level surface for installation. The Cellweb® is installed by opening the panels to their full dimensions, then cutting the web to provide the curves required. This ensures that all individual cells are open to their full dimensions of 259mm x 224mm. Partially closed cells can lead to structurally weaker areas. A thin layer of topsoil has been added and abuts the treated timber edging. This will be seeded later.



**Photo 2 – Minimal Excavation.**

Areas of the footpath required some minimal excavation to ensure that the gradient would comply with building regulations. Minimal disruption to tree roots was achieved through careful excavation, under the supervision of Trevor Bridge Associates Arboriculturalist Mike Gregory.

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Photo 3 – The Finished Footpath

Photo three shows the newly surfaced and completed footpath. The final surface is a permeable resin bound gravel. This allows continuing water migration and gas exchange, while aesthetically complimenting the surroundings.

## Conclusion

This case study provides a shining example of a well thought out and well constructed footpath through the RPAs of retained trees. The trees provide real amenity value and a feeling of maturity to the new development. The use of the materials and techniques outlined above will ensure that these trees continue to make a contribution for many years to come.

The above footpath will be formally adopted by Liverpool City council. For further examples of adopted Cellweb® schemes please contact the Tree Root Protection Team at Geosynthetics Ltd on 01455 617139.

*We have specified the use of three dimensional cellular confinement systems on many occasions. In specifying its use there are always a number of factors to consider to ensure non-dig solutions are achievable and sustainable. Geosynthetics provide an excellent product and, just as importantly, provide excellent technical support both in the planning and implementation stages.*

**Mike Gregory - Trevor Bridge Associates**