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BICESTER GATEWAY BUSINESS PARK, OXFORDSHIRE

**ARCHAEOLOGICAL PROTECTION MEASURES REPORT
FOR PHASE 1B ON BEHALF OF BLOOMBRIDGE LLP**

APPLICATION REF: 16/02586/OUT

Prepared by Brian Hamill (with Input from Cotswold Archaeology):

19 January 2017

Purpose

This Method Statement explains how, during detailed design and the course of construction, the developer of Bicester Gateway will protect the archaeology in Phase 1B, illustrated on the Archaeology Report Map shown at Section 3.6 of the Design & Access Statement. The reports by Cotswold Archaeology on the planning file provide the detail, explaining the significance, and justifying the approach we propose. The idea is that the archaeological remains in this area will be preserved in situ, with no buildings, no ground penetrating foundations, and no tree planting permitted. The archaeological potential of Phase 1A has been found to be limited, with no preservation in situ proposed.

Protection Methodology

Our response to the need for archaeological protection started pre-application with amendments to the concept design. The Master Plan therefore shows B1 development fronting on to the A41 and sited away from the area where archaeological protection works are required. The intention is to use the south-east corner of Phase 1B for car parking.

The application site is lower than the surrounding roads, and Phase 1 is not in an area of flood risk, so there is plenty of scope to make up the land deploying a horizontal bund and cellular confinement techniques. As the Bicester Gateway application is currently at the outline application stage, the exact techniques deployed can be subject to a planning condition requiring the prior approval of the design and methodology. Therefore, the exact details will be approved by Cherwell District Council (on advice from the County Archaeologist) prior to the commencement of development within Phase 1B.

Our outline proposal is that, prior to construction commencing, the following will take place:

1. The Construction Manager will be issued with a copy of the planning permission, together with this Method Statement (updated prior to commencement) and the reports prepared by Cotswold Archaeology.
2. A Pre-construction Meeting will be held between the appointed contractor and Cotswold Archaeology to ensure that the archaeological issues are understood and the proposed protection measures are fit for purpose and will be implemented in a diligent way.
3. Cotswold Archaeology will hold a Watching Brief during the construction of Phases 1A and 1B.

The following protective methodology illustrates the approach to construction works, with the final detail being approved by way of the pre-commencement condition referred to above:

1. The area subject to protective measures will be clearly identified on site, including fencing and signage.
2. The ground will be cleared of vegetation, with appropriate supervision on site by Cotswold Archaeology.

3. The existing ground level will then be made up and levelled to form a horizontal buffer zone, with a geotextile cellular confinement system (“CCS”) added on top, as the principal measure to protect the in situ archaeology, with a 150 mm layer of fine sand above this forming a physical buffer with the final finished surface (engineered to protect against compaction and subsidence). The CCS will be semi-permeable, akin to the protective measures used in root protection zones. Terram, for example, is one of the leading providers of such systems (see Appendix).
4. The buffer zones and CCS will be selected to maintain the sub-soil burial environment (e.g. hydrology), based on advice from Cotswold Archaeology.
5. The proposed car park area will then be finished off and set out on this made up area, having regard for all normal engineering requirements.

There will be no piled foundations, digging or other disturbance in the archaeological protection zone, and there will be no tree planting. SUDs drainage will be deployed and any service ducts (e.g. cabling for lights) will be designed and installed with input from Cotswold Archaeology. Subject to levels, any new service ducts will be set within the horizontal buffer zone. It is expected that all major services will be routed away from the protected area – in any event, the planning condition protecting the archaeology will specifically exclude foundations and service ducts within the archaeological layer, so further permissions would need to be sought in the unlikely event that services need to cross the protected area.

Conclusion

We are currently at the outline planning application stage. Conditions will be imposed to protect the archaeology identified by Cotswold Archaeology in the south-east corner of Phase 1B. These conditions will prohibit intrusive works such as digging, foundations, services and tree planting in this area, and pre-commencement conditions will require the submission and approval of a detailed report that provides for the installation of horizontal bunds and a CCS, or such other system, that will ensure the archaeology remains undisturbed and preserved in situ in accordance with the principles outlined in this Method Statement. Cotswold Archaeology will hold a Watching Brief and will be on hand to advise throughout the detailed design and construction phases.

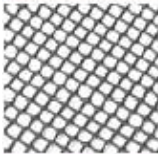
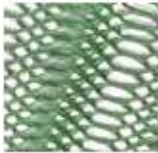










APPENDIX: EXAMPLES OF CELLULAR CONFINEMENT SYSTEMS

Product Selector

for vehicular applications

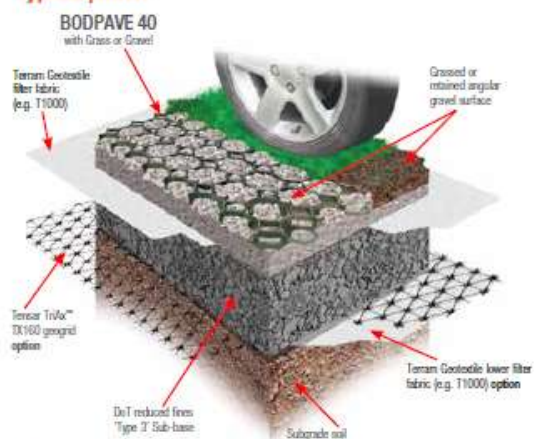
The chart below provides an overview of which product may be best suited for your grass or ground reinforcement project as determined by the existing ground conditions, the application and the frequency of use. All products are suitable for pedestrian applications.



Product	Frequency Of Use	Suggested Applications	Loading	Page
 TURFPROTECTA Two grades of recycled plastic mesh for grass reinforcement	 Infrequent vehicular use	Occasional use overflow grass car parks Pedestrian/ wheelchair access routes	 	6
 GRASSPROTECTA Two grades of thick plastic grass reinforcement mesh	 Occasional/Consecutive vehicular use	Overflow grass car parks Pedestrian/ wheelchair access routes	 	8
 BODPAVE 40 (Grass) Medium duty plastic porous paving grid for grass reinforcement	 Occasional/Consecutive vehicular use	Grass car parks Fire access routes	 	10
 BODPAVE 40 (Gravel) Medium duty plastic porous paving grid for gravel retention and stabilisation	 Regular vehicular use	Fire access routes Car parks Driveways Cycle routes	 	10
 BODPAVE 85 (Grass) Heavy duty interlocking plastic porous pavers for grass reinforcement	 Occasional/Consecutive vehicular use	Grass coach parks Grass car parks Fire access routes	  	13
 BODPAVE 85 (Gravel) Heavy duty interlocking plastic porous pavers for gravel retention and stabilisation	 Frequent/Intensive vehicular use	Coach parks Fire access routes Car parks Driveways Cycle routes	  	13
 TRUCKPAVE (Grass) Heavy duty recycled plastic porous paver for grass surfaces	 Regular vehicular use	Overflow grass car parks Pedestrian/ wheelchair access routes	 	16
 TRUCKPAVE (Gravel) Heavy duty recycled plastic porous paver for gravel	 Frequent/Intensive vehicular use	HGV yards, HGV access roads Fire access routes Coach parks Car parks	 	16

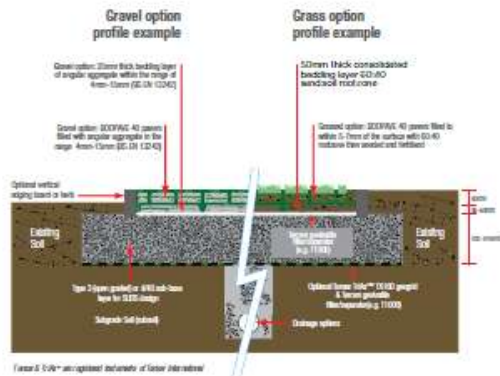
This product selector is for guidance only. Many variables affect the final determination of the suitability of a product and we would advise speaking to our technical sales team for further guidance. Product selection determined by application & site conditions.

Typical profile



Not all layers will apply to every application and drainage may be required. Please refer to design guidance documents.

Typical profile



Protect tree roots from vehicle traffic, whilst maintaining water and nutrient absorption using TERRAM GEOCELL.

Using TERRAM GEOCELL for tree root protection allows the roots to remain in contact with the ground, whilst the permeable TERRAM GEOCELL is filled with a porous, no fines, free draining aggregate. This system allows easy passage of air and water providing essential nutrients to the roots. TERRAM GEOCELL is ideal for "thru-hole" situations.

Typical applications

- Permanent Motorways
- Public & Cycleways
- Drainage
- Roads
- Access Roads
- Parking Areas

See installation details and dimensions on page 10 of the data sheet.

TERRAM GEOCELL is supplied as flat panels which are opened to form the terrapans (the structure). These are positioned and pressed to the ground using heavy press and then with a rubber, permeable roller.

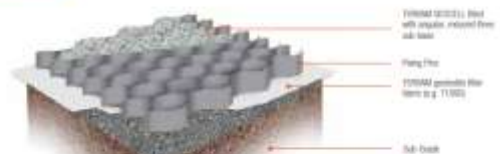
TERRAM GEOCELL cushions the soil and reduces the downward forces on the sub-base, reducing pressure on the sub-base. With out this cellular system the surface would become rutted and compacted with the traffic loads, damaging the tree roots and ultimately resulting in the death of the tree.

WHY TERRAM GEOCELL?

- Lightweight and easy to handle, reducing installation costs.
- Permeable geotextile allows free flow of water, essential in tree root applications.
- The flexible TERRAM geotextile material allows TERRAM GEOCELL to effectively adapt to any variations in the terrain.
- TERRAM GEOCELL is easy to cut to size without damage, therefore reducing cost.



Typical Profile



Filling (e.g. 10mm-15mm)

Product Details

Product	Weight (kg)	Size (mm)	Weight (kg)	Weight (kg)
TERRAM GEOCELL (10mm-15mm)	1.7	1000 x 1000	1.7	1.7
TERRAM GEOCELL (15mm-20mm)	1.7	1000 x 1000	1.7	1.7
TERRAM GEOCELL (20mm-25mm)	1.7	1000 x 1000	1.7	1.7

* These are typical values only.

Compatible Products

- BODPAVE™ (10mm-15mm)
- BODPAVE™ (15mm-20mm)
- TERRAM™
- TERRAM geotextile filter (e.g. T1000)
- Geogrid



TERRAM Data Sheets, Installation & Design Documents and Case Studies can be downloaded from: www.terram.com

For further information, see: <http://www.terram.com/downloads/> or similar systems.