

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

CONDITION 16 TREES AND BIODIVERSITY

BLOSSOM FIELDS

LAND SOUTH OF COTEFIELD BUSINESS PARK

BODICOTE

For CREST

December 2017

December 2017

Prepared by:	Susan Deakin
Position:	Landscape Manager & Ecologist
Qualifications:	BSc MSc CMLI
File name:	1908 CEMP Condition 16 18 01 02.docx
Checked by:	Sean Vessey, Director and Chartered Landscape Architect
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CONTENTS

1	INTRODUCTION	1
2	SITE ARRANGEMENTS	2

APPENDIX A

Example no dig cellular confinement system; Underhill Tree Consultancy

Tree Protection Plan (UTC-0225-P04-TPP); Underhill Tree Consultancy

1 INTRODUCTION

1.1.1 The following statement is made to address Condition 16: Trees and Biodiversity, of the planning consent (Application Ref. 14/02/02156/OUT), as set out by Cherwell District Council (3.10.2016) and relating to the construction of 95 new homes on land south of Cotefield Business Park, Oxford Road, Bodicote.

Condition 16 states:

‘Prior to the commencement of the development hereby approved, including any demolition and any works of site clearance, a Conservation Environmental Management Plan (CEMP), which shall include details of the measures to be taken to ensure that construction works do not adversely affect biodiversity, shall be submitted to, and approved in writing by the Local Planning Authority. Thereafter the development shall be carried out in accordance with the approved CEMP’.

1.1.2 The reason for this condition is to protect habitats of importance to biodiversity conservation from any loss or damage in accordance with Policy ESD10 of the Cherwell Local Plan 2011-2031: Part 1 and Government guidance contained within the National Planning Policy Framework.

1.1.3 The CEMP specifically addresses biodiversity issues and covers legislative requirements, compliance with British Standards and general aspects of the construction works potentially affecting retained trees, other vegetation and habitats and wildlife issues.

1.1.4 In this CEMP the term ‘construction’ refers to all activities carried out on the site relating to intrusive ground investigations, site preparation, excavation, materials delivery, spoil and waste disposal and all related engineering and construction activities. All works on site will be undertaken in compliance with this CEMP.

1.1.5 There follows in Section 2 a summary of arrangements on the site, key activities, access and hours of working, along with minimum standards of construction practice in relation to biodiversity and vegetation / tree protection. Appendix A sets out an Example of a no dig cellular confinement system and the Tree Protection Plan (UTC-0225-P04-TPP), provided by Underhill Tree Consultancy.

SITE ARRANGEMENTS

The site arrangements relating to ecological aspects of site protection during the construction period are set out below in terms of:

- a) *Risk assessment of potentially damaging construction activities;*
- b) *Husbandry management of the retained mature tree;*
- c) *Identification of biodiversity protection zones;*
- d) *Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction;*
- e) *The location and timing of sensitive works to avoid harm to biodiversity features;*
- f) *The times during construction when specialist ecologists need to be present on site to oversee works;*
- g) *The role and responsibilities on site of an ecological clerk of works or similarly competent person; and the*
- h) *Use of protective fences, exclusion barriers and warning signs.*

2.1.1

a) Risk assessment of potentially damaging construction activities

The site has been assessed in terms of ecological interest and there are currently no protected species issues or other notable species of fauna or flora directly associated with the scheme. As the area affected by the scheme consists of land of low ecological value recently under arable production and it is understood that the crop will have been removed and the ground surface bare, prior to the soil stripping, thus there will be no risk of disturbance to ground nesting birds or other wildlife associated with arable crops e.g. brown hare. In the event that the land has developed a vegetation cover suitable for ground nesting birds (eg crops or tall weed growth) in the interim, it will be necessary to undertake the vegetation clearance during the October to February period to avoid the breeding season and to avoid any contravention of the Wildlife and Countryside Act, 1981 (as amended).

Removal of a mature sycamore tree within the site and other minor trimming of peripheral hedgerow vegetation etc. that might be required to enable the works should also be undertaken to avoid the bird breeding season. The sycamore has been surveyed in terms of bat roosts / activity; the Bat Activity and Dusk Emergence Survey (RPS, November 2014), which indicated no roosts within the tree although some bat activity was recorded in the vicinity of the tree and there is some bat roost

potential within the tree due to the presence of rot and woodpecker holes within the trunk /branches. The tree is due to be removed before the end of February 2018 (to avoid the bird breeding season) and whilst it is considered unlikely that bats have inhabited the tree in the interim, it will be necessary to take a cautious approach to avoid any contravention of the European legislation (the Conservation of Habitats and Species Regulations, 2010). The tree will be inspected as part of the update Phase 1 Ecology survey in December 2017 and if it is deemed to have increased in potential value for roosting bats, it would be recommended that the tree should be inspected by a licensed bat worker prior to removal. If any evidence of roosting bats was recorded during the inspection, a way forward would need to be agreed with Natural England and a European Protected Species (EPS) licence may be required. If the potential for roosting bats was considered to be similar to the situation in 2014, the tree should be removed by 'soft felling' in sections, possibly under the watching brief of a licensed bat worker, with any section containing holes or other crevices suitable for housing bats, left grounded overnight to allow any bats to make their way out, in accordance with best practice guidelines provided by the Bat Conservation Trust (Bats and Trees, 2015).

The only other potentially ecologically damaging construction activities could be associated with disturbance to the mature oak tree specimen to be retained within the central part of the site. This tree has potential to support breeding birds and also a small possibility of use by roosting bats (see b) below.

There is low potential for indirect impacts on the on-site oak tree and the adjacent woodland belts (to the south and east of the site) and other vegetation (to the north of the site), resulting from noise, inadvertent physical disturbance, dust, drainage issues associated with the development scheme. Any such potential impact will be short term due to the limited life-span of the works and will at any rate be avoided through the implementation of protection barriers as set out below.

2.1.2

b) Husbandry management of the existing mature tree

The existing retained oak tree located within the central part of the site is shown on the updated Tree Protection Plan (Underhill Tree Consultancy Drawing No. UTC-0225-P04-TPP, December 2017 and also assessed (Tree 13) in the Arboricultural Impact Assessment (RPS, November 2014). This is a Category A high quality mature tree and is integral to the landscape proposals for the scheme, particularly as it is the only retained element of the existing landscape vegetation, within the development. Its retention and safe-guarding is therefore paramount.

This tree is to be subject to remedial tree surgery only when essential for reasons of public health and safety. Where possible standing dead wood is to be retained for its

value to saprophytic organisms and other wildlife, however, due to the location of the tree within the proposed play area (LEAP), it will be necessary to ensure that the tree is presented in a structurally sound condition at completion of the construction phase and this will take priority over ecological interests.

As noted above there is a small possibility of bat roosts within the tree, although the Bat Activity and Dusk Emergence Survey (RPS, November 2014) indicated no roosts within the tree, some bat activity was recorded in the vicinity of the tree and there is a low bat roost potential within the mature oak tree due to the presence of scars and splits in the trunk /branches. It will therefore be necessary for any tree surgery that might be required and that might affect sections of the tree canopy with cavities or other micro-habitats suitable for roosting bats, to be preceded by an inspection by a licensed bat worker who should also ascertain whether there is any nesting activity by hole-dwelling birds e.g. starlings or owls. In general terms works to retained trees should, where possible, avoid the bird and bat breeding seasons i.e. to be undertaken between October and February inclusive.

The tree is to be reviewed regularly by the on-site Site Manager (see g) below) and in the event that there is any apparent die-back, or any other tree health and condition issues, an arboriculturalist is to inspect the trees and a judgement taken as to any remedial treatment that might be required. The recommendations of the arboriculturalist are to be undertaken by a suitably qualified and experienced tree surgeon (and not by the building contractor) either with immediate effect (e.g. any need for irrigation / nutrient supplement / pest or disease control) or during the following autumn / winter or as appropriate, for tree surgery operations, which are to be carried out by an experienced and qualified tree surgeon.

The tree is to be protected by the erection of tree protection barriers as set out in h) below and shown on the Tree Protection Plan (TPP) (UTC-0225-P04-TPP, December 2017). The tree protection barriers are to be installed prior to the commencement of soil stripping or any other enabling works / construction activities, to ensure that the tree canopy, trunk and rooting areas are adequately protected during the construction period. There is to be no soil stripping, excavation or mounding of soil or materials within the protected area and the indigenous soil and ground vegetation are to be retained intact during the construction period until commencement of the landscape and LEAP installation works.

There is to be no breach of the barrier during the construction period, unless required for essential remedial arboricultural works, until access is required to enable installation of the play area (LEAP) and associated landscape works, towards the final stages of the construction period. During these works there is to be no soil stripping, mounding or other ground works within the Root Protection Area (RPA) of the tree (as shown on the TPP), with the exception of grass seeding and natural play equipment

and hoggin path installation. During these operations the tree trunk and immediate adjoining area to be protected using a temporary fence. The hoggin and timber edging paths are to be installed strictly in accordance with a 'no dig' technique, to avoid root severance or disturbance (see Appendix A, Example no dig cellular confinement system, Underhill Tree Consultancy).

2.1.3 c) Identification of tree / biodiversity protection zones

Tree / Biodiversity protection zones will be established on the southern and eastern periphery of the development site to coincide with the boundary with the adjoining woodland belts (off-site) using protective barriers. This will ensure that there is no physical damage to the adjacent trees / hedgerows. It will also ensure that protection is afforded to the retained vegetation in the ground and under-storey layers of the woodland belts and any wildlife (including the possible use of this habitat by breeding birds, bats and invertebrates), to avoid disturbance. Any minor pruning back of trees / shrubs required to accommodate the fencing should be undertaken by a suitably qualified and experienced tree surgeon (and not by the building contractor) and at a time to avoid the bird breeding season.

In the unlikely event of accidental straying into the working area by nocturnal and other animals (e.g. deer, fox or badgers) during the lifespan of the construction works, the protective barriers to be thoroughly checked for any disrepair and any burrowing activity to be addressed (see h) below.

The edge of the protection zones will be demarcated by temporary protective barriers using Heras panels (see below) to prevent inadvertent ingress by vehicles or other machinery or operatives and that there is no storage or other ancillary operations undertaken within the biodiversity protection zones. The permanent plot boundary fences will be erected at an early stage of the construction period to enable further security of the site and protection of off-site habitats.

2.1.4 d) Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction

Standard best practice procedures will be adhered to including vehicular wheel washing and damping down to minimise the spread of dust both within the working area. Due to the lack of significant ecological issues relating to the scheme and the protection of the adjacent biodiversity protection zones adjacent to the development area, there will be no need for any other specific physical measures or sensitive working practices, to avoid or reduce impacts during the construction period.

The only requirement in this respect is vigilance and daily monitoring to ensure that the biodiversity protection areas and the protected area around the retained oak tree

remain undisturbed and the protective barriers remain intact throughout the construction period.

2.1.5 e) The location and timing of sensitive works to avoid harm to biodiversity features

The agreed day time working hours regime (7.30am to 6pm Monday to Friday , 7.30am to 1pm Saturdays and no working on Sundays and bank holidays) will ensure that there will be no need for artificial lighting for the construction site as a whole; (except during the mid-October to mid-February period in the late afternoon, as necessary to light the site compound, due to reduced daylight hours) and there will therefore be no significant disturbance to any activity by nocturnal animals (e.g. owls, bats and badgers) within the wider vicinity of the development area.

There will be no need for any loss or disturbance to habitats supporting or potentially supporting nesting birds, with the exception of any remedial tree surgery to the retained tree. These are to be timed to avoid the bird breeding and bat breeding season (see b) above).

2.1.6 f) The times during construction when specialist ecologists need to be present on site to oversee works

There will only be a need for attendance on site by specialist ecologists during the construction period in the event that there is a requirement for husbandry / health and safety management of the retained tree. In the scenario that there is any essential tree surgery requirement that might affect sections of the tree canopy with cavities or other micro-habitats suitable for roosting bats, these works to be preceded by an inspection by a licensed bat worker, who should also ascertain whether there is any nesting activity by hole-dwelling birds e.g. starlings or owls. In general terms works to retained trees should, where possible, avoid the bird and bat breeding seasons i.e. to be undertaken between October and February inclusive.

2.1.7 g) The role and responsibilities on site of an ecological clerk of works or similarly competent person

The Site Manager or an approved and competent foreman is to be nominated as an ecological clerk of works. This role will be to ensure compliance with the CEMP and liaise with the Project Ecologist as appropriate, in order to ensure that there is no deterioration in the health and condition of the retained oak tree or the adjacent (off-site) biodiversity protection zones and that these remain fully protected for the duration of the construction period.

Whilst this person should be instructed by the Project Ecologist with respect to their role in this respect at the beginning of the construction period, they are not expected

to have any ecological qualifications or experience and therefore any concerns are to be communicated directly to the Project Ecologist, if there are concerns over the safeguarding of the retained habitats during the works period. The Project Ecologist may be required to make interim visits, in the event of any issues arising.

2.1.8

h) Use of protective fences, exclusion barriers and warning signs

The retained oak tree within the central part of the site will be protected by a suitable and BS compliant (BS 5837:2012 Trees in Relation to Design, Demolition and Construction) tree protection barrier during the construction period, using Heras fencing as indicated (black line boundary) on the Tree Protection Plan (TPP), (UTC-0225-P04-TPP, December 2017). The details of the barrier should conform with Figure 2 Default Specification for Protective Barrier and Figure 3 Examples of Above Ground Stabilising Systems provided as part of the TPP.

The retained woodland belts beyond the southern and eastern site boundaries along with other retained vegetation to the north of the site effectively comprise biodiversity protection zones. These will be demarcated by the installation of Heras fencing / exclusion barrier on the working side of the zone.

Appropriate 'No Access: Biodiversity Protection Zone' warning signage will be installed on all 4 sides of the tree protection barrier and at minimum 100m intervals along the southern and eastern fenced boundaries of the site.

This exclusion barrier strategy will prevent inadvertent ingress by vehicles or other machinery or operatives and will ensure that there is no storage or other ancillary operations undertaken within the biodiversity protection zones. Regular daily inspection of the fencing barriers will be required to ensure that all the protective barriers remain intact throughout the construction period (except where legitimate access is required to the area around the retained oak tree, for LEAP construction works, see b) above). Any disrepair to the barriers is to be addressed with immediate effect. In the event that there is apparent ingress by mammals (badgers, foxes, rabbits etc.) under the site boundary protection barriers and thus danger to the animals from entering the construction site / adverse effects on the construction activities, the Project Ecologist to be consulted and an appropriate method of deterring access to be agreed and implemented.

RELEVANT LEGISLATION, STANDARDS AND GUIDANCE

- Wildlife and Countryside Act, 1981 (as amended)
- The Conservation of Habitats and Species Regulations, 2010
- BS 58837: 2012 Trees in Relation to Design, Demolition and Construction
- Bats and Trees, Bat Conservation Trust, 2015

**BLOSSOM FIELDS, LAND SOUTH OF
COTEFIELD BUSINESS PARK,
BODICOTE**

**CONSTRUCTION ENVIRONMENTAL
MANAGEMENT PLAN: CONDITION 16 TREES AND
BIODIVERSITY**

December 2017

1. EXAMPLE NO DIG CELLULAR CONFINEMENT SYSTEM; UNDERHILL TREE CONSULTANCY
2. TREE PROTECTION PLAN (UTC-0225-PO4-TPP); UNDERHILL TREE CONSULTANCY

Appendix A - No-dig, cellular confinement systems

Principles of no-dig hard surface construction

Cellular confinement systems (CCS) are constructed using a three-dimensional grid of plastic cells filled with no-fines angular aggregate. The system transfers vertical loads horizontally, thereby reducing ground pressure. The cells prevent sideways displacement of the aggregate.

Several manufacturers produce CCSs (see below). Cellweb™ Geosynthetics recommend a grid depth of:

- 100mm for domestic vehicles.
- 150mm for refuse vehicles, fire engines etc.
- 200mm for heavy construction vehicles.

Other than removal of surface vegetation and filling of ground irregularities with sharp sand, there is to be no preparation of the soil beneath the CCS with **NO COMPACTION** of soil by vehicles or plate compactors.

Between the soil and the CCS, a geotextile such as Treetex™ is laid. Apart from separating the soil from the aggregate, Treetex™ minimises the movement of oil pollution into the root zone beneath. A general geotextile such as Terram™, is not suitable.

The CCS cells are filled with a no-fines angular aggregate, such as Type 4/20 or Type 20/40. MOT Type 1 or Type 3 **MUST NOT BE USED**. The fine particles in these products prevents air and water diffusion.

The CCS edges can be retained by several methods, such as filling the outermost cells with concrete, mounding with soil, or by using railway sleepers or timber board edging. These methods can also be used to retain the wearing surface, or a system using aluminium edging, such as AluExcel™ or similar, can be fixed into the concrete in the outermost cells.

The wearing surface must be porous such as SuDS block paving using grit between blocks, porous Bitmac, porous resin-bound gravel using a porous binder course, loose gravel, or a proprietary product such as Golpla System infilled with gravel, or Sudscape.

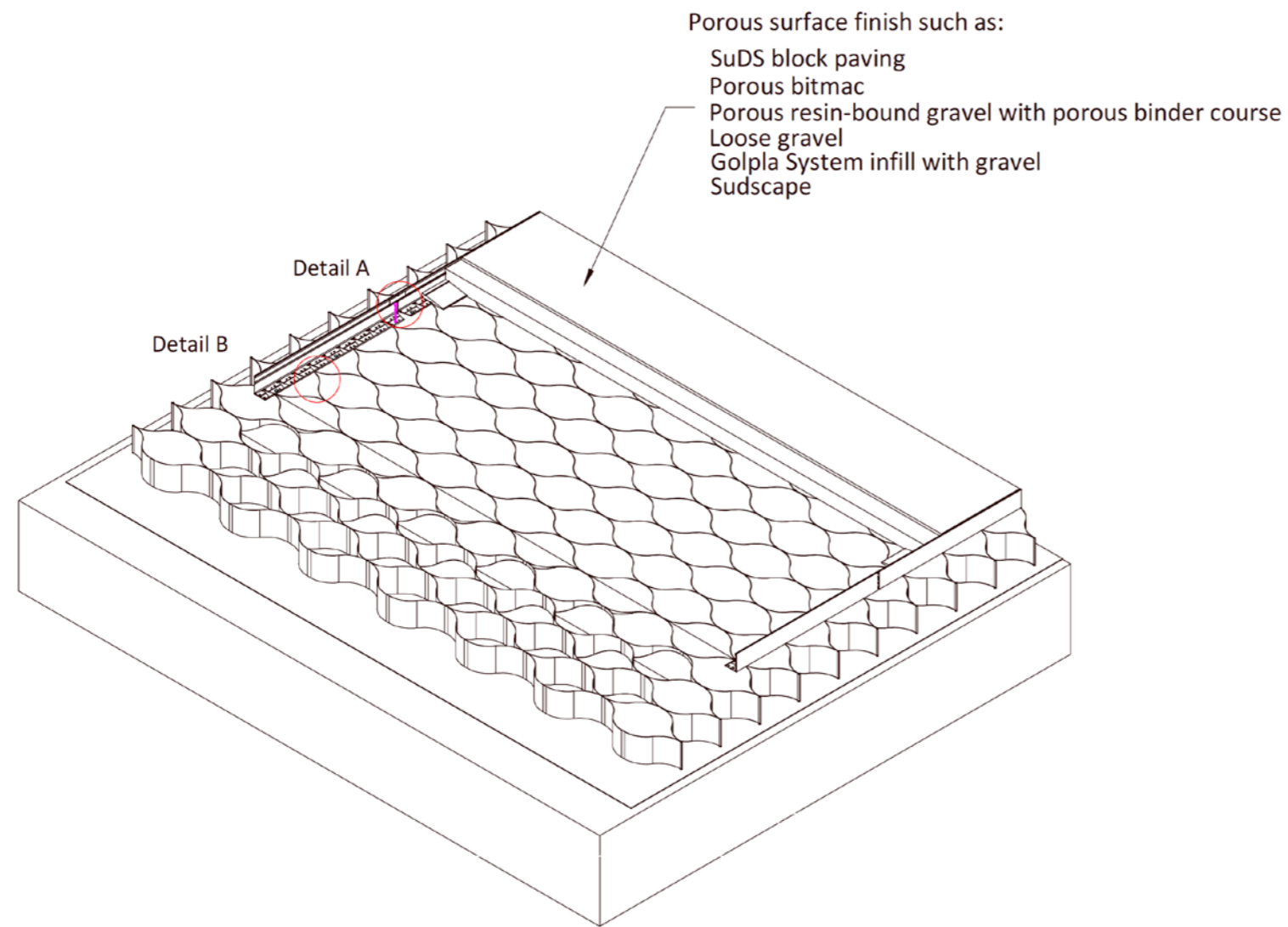
The suggested methods and products are for illustration only. A structural engineer or other professional, should be consulted to ensure suitability for the intended use and ground conditions. Some CCS manufacturers provide a design service.

The following is a list of manufacturers and suppliers of CCSs and edging materials. Other products and suppliers are available:

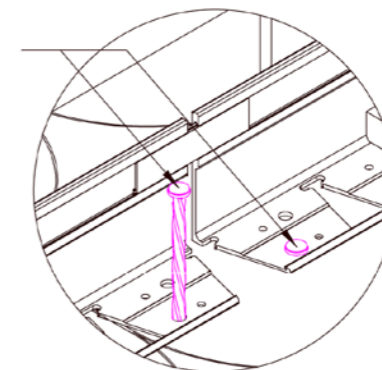
- Cellweb© - Geosynthetics www.geosyn.co.uk/product/cellweb-tree-root-protection
- InfraGreen Solutions – Infracore TRP <http://infragreen-solutions.com/tree-root-protection>
- ProtectaWeb™ - Wrekin www.wrekinproducts.com/articles/protectaweb-meets-tree-root-protection-requirements
- Treetex™ - Geosynthetics www.geosyn.co.uk/wp-content/uploads/2015/08/cellweb-fact-sheet-4-60.pdf
- AluExcel™ - Kinley <http://www.kinley.co.uk/products/edging/exceledge>
-



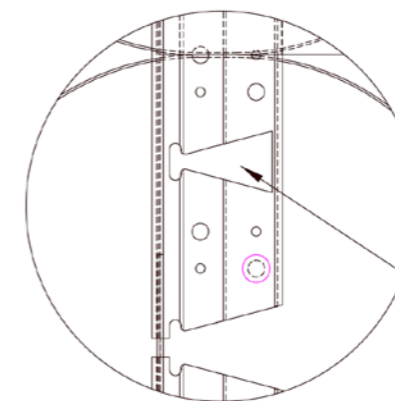
Images of cellular confinement system and edging detail



Ensure that fixing stakes are driven down fully, so that the underside of the head is flush with the top face of the extrusion foot

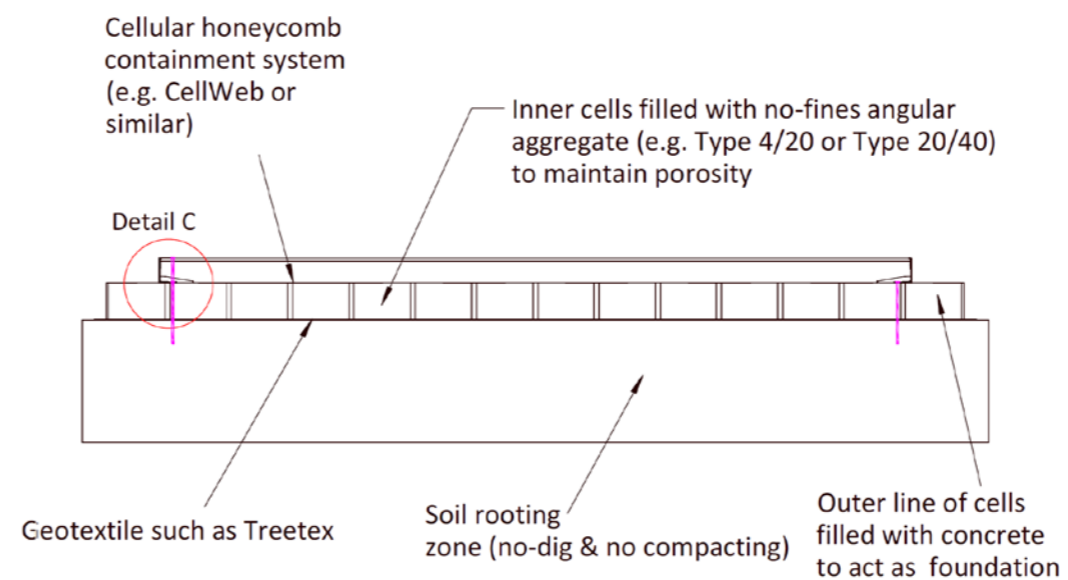
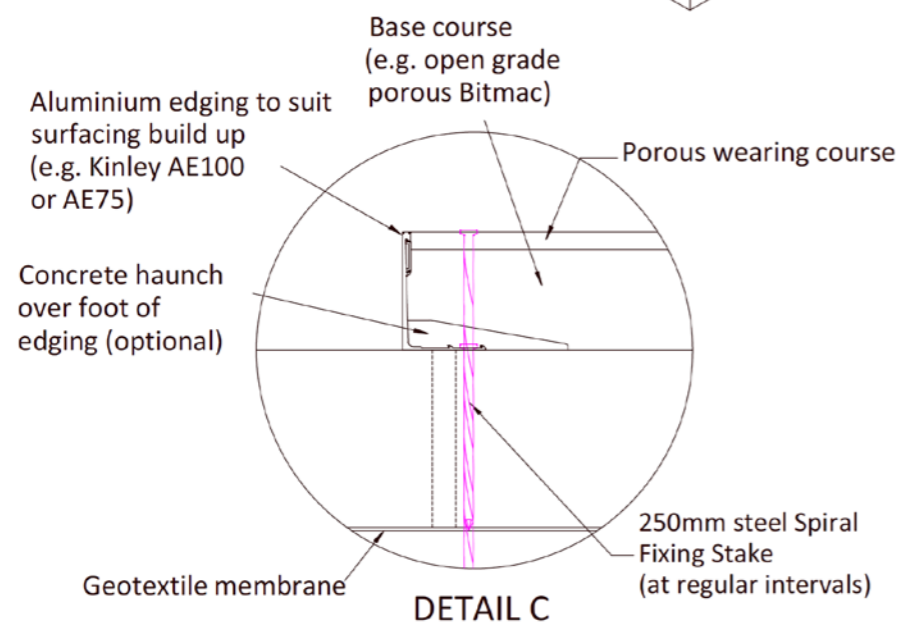


DETAIL A



Cut-out pattern in extrusion to allow internal and external curves to be formed

DETAIL B



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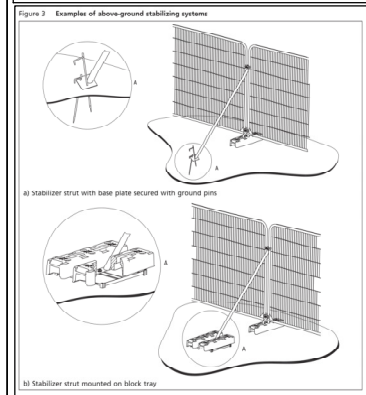
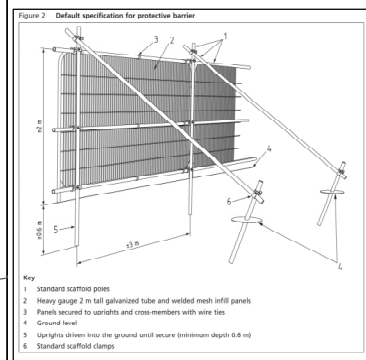
mail@underhilltc.co.uk www.underhilltc.co.uk

Example no-dig cellular confinement system

Scale: NTS



- T1 Category A - high quality & value
- T1 Category B - moderate quality & value
- T1 Category C - low quality & value
- T1 Category U - unsuitable for retention
- Tree to be retained
- Tree to be removed
- Root protection area
- Tree protection barrier
- Specialist methods of construction



Rev - : Change to layout 29.01.18



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 mail@underhilltc.co.uk www.underhilltc.co.uk

Project:
Bodicote, Banbury

Client:
Crest

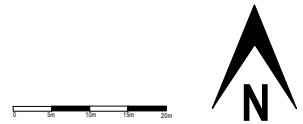
Title:
Tree Protection Plan

Scale: **1:1000 @ A3**

Date: **06.12.17**

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Drawing No:
UTC-0225-P04-TTP Revision: **A**



Stansted:
Unit 1, The Exchange,
9 Station Road,
Stansted, CM24 8BE

t +44 (0)1279 647044
e office@lizlake.com
www.lizlake.com

Bristol:
1 Host Street,
Bristol, BS1 5BU

t +44 (0)117 927 1786
e office@lizlake.com
www.lizlake.com

Nottingham:
Suite 201,
20 Fletcher Gate,
Nottingham NG1 2FZ

t +44 (0)115 784 3566
e office@lizlake.com
www.lizlake.com

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