TREE CONSULTANTS

ARBORICULTURAL METHOD STATEMENT

to BS 5837:2012 at:

Company Shop, Wentworth Way Industrial Estate, Wentworth Way, Tankersley, Barnsley, S75 3DH

This document describes how the trees will be protected and managed during the development of this site. It explains how and when the protection measures must be installed and maintained throughout the development.

A copy of this document report must be permanently available on site for the duration of all development activity and should be referenced for practical guidance on how to protect the retained trees at this site.

Prepared for:
Heatons Planning Ltd

Date: *January 2025*

Reference: *AWA6356*

Institute of Chartered Foresters
Registered Consultant

Office: 0114 272 1124 Mobile: 0776 631 0880 Email: info@awatrees.com Website: awatrees.com
Union Forge, 27 Mowbray Street, Sheffield, S3 8EN. AWA Tree Consultants Limited. Company No. 8520123. Registered in England & Wales.

TMP006 – D
Template Revision 01
Auth By: APW
Date: 09/09/2024

Contents

1. Introduction

1.1 Instruction

1.1.1 We were instructed by Heatons Planning Ltd to prepare an arboricultural method statement for the proposed development.

1.2 Purpose

1.2.1 This method statement has been prepared in order to demonstrate that the development operations at this site can be undertaken with minimal risk of adverse impact on the trees to be retained.

1.2.2 This method statement conforms to BS 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*. It is based on the arboricultural data, collected at a site visit during April 2024, detailed within Appendix 3 of this report.

1.3 Description of Development

1.3.1 It is proposed to alter the existing parking and landscaping layout at the site to provide additional parking spaces and access to the existing warehouses. The proposed development layout has been provided by my client and is the basis for the Tree Protection Plan at Appendix 4.

1.4 Details of Consent

1.4.1 Planning consent is subject to this method statement being agreed upon in advance by the Local Planning Authority. The contents of this report must be adhered to, before, during, and after the construction phase.

1.4.2 As such, no equipment, machinery or materials shall be brought onto the site in connection with the development until this arboricultural method statement detailing tree management and tree protection measures has been submitted to and approved by the Local Planning Authority.

1.5 Legal

1.5.1 The following advice is for guidance purposes only. Some trees are protected by legislation, and it is essential that the legal status of trees is established prior to carrying out works to them.

1.5.2 Unauthorised work to protected trees could lead to prosecution, resulting in enforcement action such as fines or a criminal record. Tree Preservation Orders, Conservation Areas, Planning Conditions, Felling Licences or Restrictive Covenants legally protect many trees in the UK.

1.5.3 An online search was undertaken with Barnsley Metropolitan Borough Council on 28/11/24 to check whether any trees at the site are protected by a Tree Preservation Order or are located within a Conservation Area. As of this date no trees at the site are protected by a Tree Preservation Order or are within a Conservation Area.

1.5.4 Due to the large potential penalties for illegally carrying out work to protected trees, before authorising any tree works a further check should be made with the Local Planning Authority to confirm if any trees are covered by a Tree Preservation Order or are within a Conservation Area. If either applies, then statutory permission is required before any works can take place (unless such work is approved as part of full planning permission).

1.5.5 The Multi-Agency Geographical Information for the Countryside (MAGIC) website was used to search for areas of ancient woodlands listed on the Ancient Woodland (DEFRA 2021), and a check for catalogued Ancient and Veteran trees using the woodland trust ancient tree inventory (ATI) (Woodland Trust 2021).

1.5.6 It was confirmed that there are no designated ancient woodlands or veteran or ancient trees within the survey area.

1.5.7 Trees provide a wide range of habitats for many species, some of which are legally protected such as bats, nesting birds, badgers and dormice. It is essential that appropriate care is taken to ensure that this legislation is not contravened.

1.5.8 When appointing a tree surgeon, only properly qualified and experienced companies should be used, who have adequate Public Liability and Employer's Liability Insurance.

1.5.9 All tree work should be carried out according to British Standard 3998:2010 Tree Work - Recommendations.

2. Method Statement Timeline

2.1 Overview of Sequence of Operations

2.1.1 In overview, it is necessary to undertake the following sequence of operations in relation to arboricultural input for development operations.

1 Method statement approved by the LPA

2 Undertake tree works

3 Install tree protection measures

4 Pre commencement meeting/ confirm fencing is as specified

5 Construct new development

6 Remove tree protection fencing and undertake paving/soft landscaping within RPAs.

2.2 Specific Sequence of Operations

2.2.1 The following timeline table informs the key principles for development operations proceeding in relation to arboricultural requirements conditioned as part of this method statement.

2.2.2 The actions and timescales within this table must be adhered to in order to discharge the arboricultural method statement planning condition for this site.

2.2.3 The precise timing and order of some of the development operations may need to be changed due to site specific operational requirements, yet any operations that may affect the trees on the site must be done so under arboricultural supervision by a suitably qualified person appointed by the contractor.

Sequence of Operations		
Stages	***Action***	***Arboricultural Input***
1 Approval	This AMS is submitted to and approved in writing by the LPA.	If necessary, liaise with contractor and LPA to discuss methodologies detailed.
2 Tree Works	Tree removals and pruning works shall be carried out as the first operation on site, in accordance with Appendix 3 and as detailed in section 3.1.	Review the tree work requirements with the tree contractor. If necessary, liaise with the contractor on site during tree works.
3 Tree Protection	Installation of the tree protection measures will take place as shown at Appendix 4, prior to any storage of plant, materials and machinery.	If necessary, liaise with the contractor installing the tree protection measures until completed to the standard specified in this method statement.
4 Site Meeting	Following installation of tree protection measures, the LPA shall be invited to inspect the fencing and discuss any other site operations that have implications for trees.	Meeting with a representative of the LPA and the site manager. Alternatively, contractor can confirm the protection measures, and tree works are as specified by taking photographs.
5 Construction	Undertake the construction of the new development.	If necessary, liaise with the local authority and the site foreman to ensure any issues are adequately resolved.
6 Site Finishing	Removal of tree protection fencing must only be undertaken when all site traffic and machinery has left the site. Undertake associated landscaping within RPAs.	If acceptable to the LPA, the contractor can take photographs of the site to give to the LPA to gain approval for the removal of the tree protection fencing.

3. Tree Management

3.1 Tree Works

3.1.1 Removals: T8, T13, T24, T26, G27, T29 and T30 require removal to facilitate the development.

3.1.2 G22 requires partial removal to facilitate the new access road.

3.1.3 2 trees are recommended for removal regardless of the development due to their poor condition and limited prospects – T9 and T12.

3.1.4 All tree work must be carried out according to British Standard 3998:2010 Tree Work - Recommendations.

3.1.5 When appointing a tree surgeon, only properly qualified and experienced companies should be used, who have adequate Public Liability and Employer's Liability Insurance.

4. Tree Protection

4.1 Tree Protection Fencing

4.1.1 The tree protection fencing for this site should be located as shown on the Tree Protection Plan at Appendix 4 (as illustrated with a thick purple or orange line).

4.1.2 The tree protection fencing will be appropriate to the degree and proximity of likely construction works. In this instance, due to the ground conditions an adequate level of protection for the trees could be provided by a mixture of secured 'Heras' type fencing, of welded mesh panels on rubber or concrete feet and plastic 'mesh' fencing (see Figures at Appendix 1 for examples).

4.1.3 The precise fencing location may need to be slightly adjusted on site due to local site conditions but is not expected to differ from that shown on the Tree Protection Plan. The final fencing position must be agreed on by the LPA before the commencement of any site works.

4.1.4 The tree protection fencing details should be incorporated into relevant subsequent plans, method statements used for design purposes and construction drawings issued for use on site, to ensure that all interested parties are fully aware of the areas in which access and works may and may not take place.

4.1.5 The fencing should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence (see Appendix 1 for an example). The fencing panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins or mounted on a block tray (see Appendix 1 for an example).

4.1.6 The area enclosed by the fencing is referred to as the Construction Exclusion Zone (CEZ); this area should be considered a restricted area. No pedestrians, vehicles, storage of materials, equipment or machinery should be allowed within the CEZ unless specified in this method statement. The site manager must ensure that all personnel are aware of the restrictions that apply to the fenced-off area.

4.1.7 Once the fencing is erected, waterproof warning signs labelled 'Tree Protection Area' should be placed at 3m intervals to ensure that all personnel are aware of the restrictions that apply to the fenced-off area (see at Appendix 1 for example signs).

4.1.8 The tree protection fencing should be inspected for faults or damage by the site manager or other responsible named person on a regular basis and a written record kept. Any faults or defects should be repaired or replaced as soon as is reasonably practicable. The Tree Protection Fencing shall not be removed, breached or altered without prior written authorisation from the local planning authority and under arboricultural supervision by a suitable named responsible individual appointed by the site manager.

4.2 Ground Protection Boards

4.2.1 New landscaping in the form of a footpath is proposed that encroaches into the RPA of T3. As such, ground protection will be required within the RPA of T3 to avoid compaction of the soil which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

4.2.2 Interlinked ground protection boards should be used (see Figures at Appendix 1 for an example). They should be located as shown on the Tree Protection Plan at Appendix 4 (as illustrated with a light blue hatched area).

4.2.3 The precise location of the boards may need to be slightly adjusted on site due to local site conditions, but is not expected to differ significantly from that shown on the Tree Protection Plan.

4.2.4 The new temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

4.2.5 For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane.

4.2.6 For pedestrian-operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane.

5. Works Close To Retained Trees

5.1 New Hard Surfaces

5.1.1 New hard surfaces, in the form of driveways and footpaths, are proposed within the RPA of the retained trees T3.

5.1.2 The works within the RPA should not adversely impact on the health or future condition of the trees provided a 'no-dig' method of construction is utilised. For details of 'no dig' methodology see Appendix 5.

5.1.3 The design and construction of the hard surfaces needs to be sensitive to the requirements of tree roots, substantial enough to withstand the expected levels of traffic and practicable in terms of ease of fabrication.

5.1.4 The finished surface must be porous in order to allow air and water to reach the tree roots, whilst at the same time being able to withstand the load applied. Toxic substances which could leach into the ground must be avoided. Severance of roots and soil compaction should be avoided. Any minor excavations in these areas to remove the existing surface vegetation/turf layer must be done so using hand tools only and under arboricultural supervision.

5.1.5 We are not qualified to recommend any particular construction method in terms of durability or structural integrity and any proposed construction method should be approved by a qualified structural engineer prior to implementation. Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement system, such as those provided by Geosynthetics Limited (http://www.geosyn.co.uk).

5.2 New Boundary Fencing

5.2.1 New boundary fencing is to be installed within the RPAs of retained trees T32.

5.2.2 The encroachment into the trees' RPAs should not significantly adversely impact on the health or future condition of the trees, provided posts and panels type footings are used as opposed to strip footings, with the holes for the posts dug by hand, avoiding significant tree roots where possible.

5.3 Drainage and Utilities

5.3.1 New drainage and underground utilities are to be positioned outside of the RPAs of retained trees, and above ground utilities will be routed away from areas where they are likely to interfere with the retained trees' crowns.

5.3.2 NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees should be considered when installing services.

5.4 Additional Precautions

5.4.1 Allowance should be made for operations outside of the CEZ that could indirectly impact on trees. Including space for site huts, temporary toilet facilities (including their drainage) and other temporary structures; and space for storing (whether temporary or long-term) materials.

5.4.2 Care must be taken to prevent contamination with chemical spillages, including petrol, diesel and oils. Cement mixers and any other toxic materials should not be permitted within the RPA of the trees. Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

5.4.3 Fires on the site should be avoided if possible. Where they are unavoidable, and approved by the Local environmental health authority, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be considered when determining its location, and it should be attended always until safe enough to leave.

5.5 Post Construction Landscaping

5.5.1 Many of the trees on site may be subject to some form of landscaping or seeding beneath their canopies after the development phase. At this stage the protective fencing will have been removed and the property may be occupied.

5.5.2 Landscaping works should be carried out in such a way as to avoid ground level changes or deep digging. Tractor mounted rotovation or other mechanised cultivation methods must not be used.

5.5.3 No heavy machinery should be brought into the vicinity of retained trees.

5.5.4 Herbicides should be appropriate for the purpose and should not be used in such a way as to damage any retained trees or vegetation.

6. Signature

I trust this report provides all the required information.

Signed

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Adam Winson
Chartered Arboriculturist, MSc, BSc (Hons), MICFor, AIEEM

28th January 2025

AWA Tree Consultants Limited
Union Forge
27 Mowbray Street
Sheffield
S3 8EN

www.awatrees.com

Appendix 1: Images and Figures

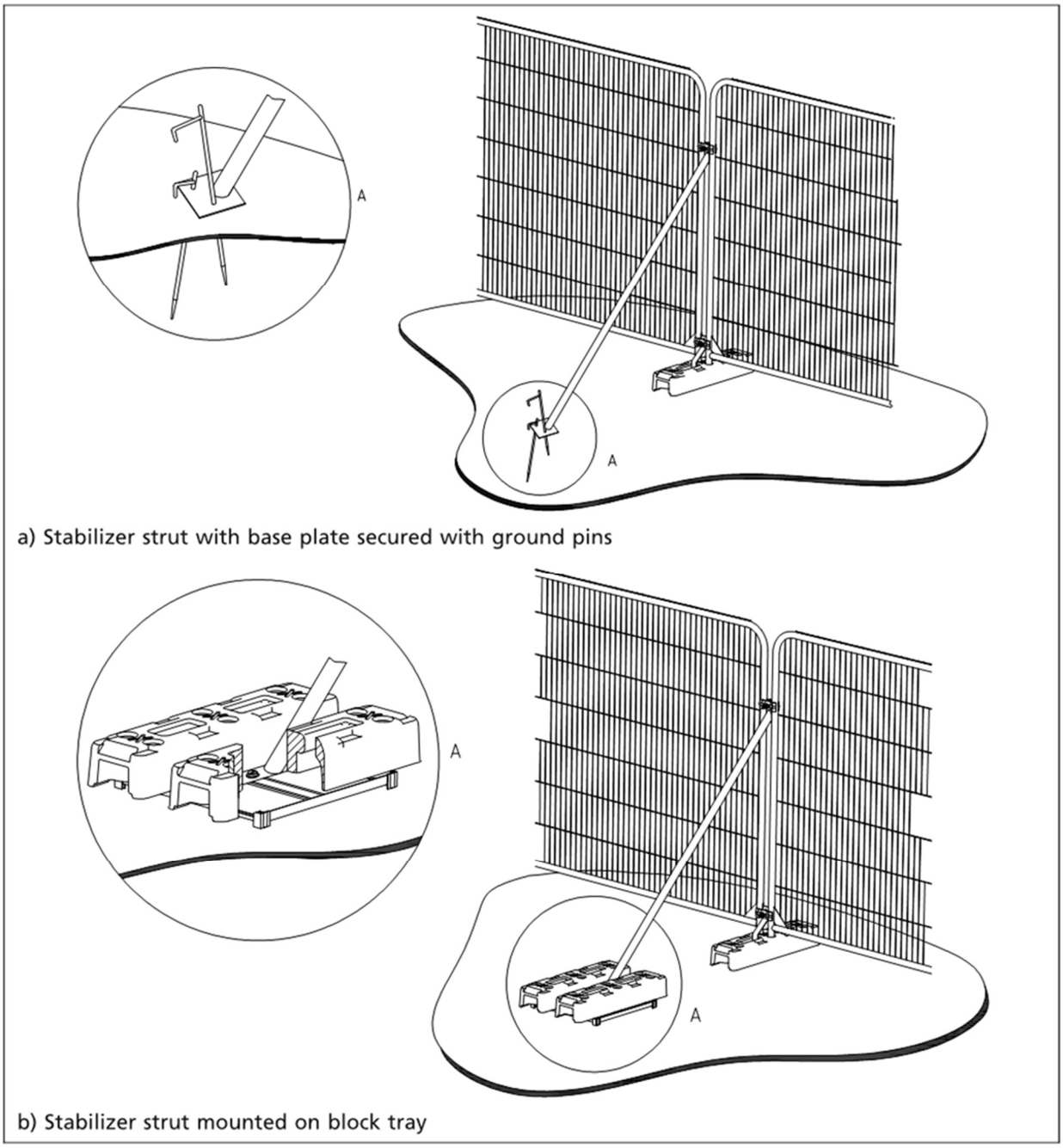

Figure 1: Secured 'Heras' type fencing with stabilizing system and fixed central pins (©BSI)

Figure 2: Secured 'Heras' type fencing with stabilizing system and anti-tamper couplers

Figure 3: Anti-tamper couplers to secure fencing and avoid unauthorised access

Figure 4: Plastic mesh fencing secured with heavy duty metal stakes

Figure 5: Warning sign for fencing

Figure 6: Example of A3 correx tree protection warning sign fixed to fencing panel


Figure 7: Interlinked ground protection boards placed on top woodchip

Appendix 2: Relevant Contact Details

Contact Name	Organisation/ Details	Contact Number	Contact E-mail
Clive Saul	Heatons Planning Ltd	07425 429 801	clive@heatonplanning.co.uk
Adam Winson	AWA Tree Consultants Ltd	0114 272 1124	adam@awatrees.com
Edward Jowett	Barnsley Tree Officer Development Management	01226 772557	EdwardJowett@barnsley.gov.uk

	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T1	Oak	*Qercus robur*	Early-mature	14	1	450	Yes	2	6	6	7	3	Limited access around base	Single stemmed. Vertical. Epicormic growths. Old pruning wounds	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Moderate	B	No works required to facilitate the development.
T2	Oak	*Qercus robur*	Early-mature	14	1	450	Yes	2	3	5	6	6	Limited access around base	Single stemmed. Vertical. Epicormic growths. Old pruning wounds	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Moderate	B	No works required to facilitate the development.
T3	Whitebeam	*Sorbus aria*	Early-mature	13	1	400	No	2	4	4	5	5	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor deadwood		Good	Good	>40 yrs	Low	B	No works required to facilitate the development.
T4	Cherry	*Prunus avium*	Semi-mature	4	1	170	No	2	4	2	4	2	No visual defects	Single stemmed. Vertical. Epicormic growths. Old pruning wounds. Stubs	Old pruning wounds. Minor deadwood. Minor dieback	Pruned into shape	Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T5	Cherry	*Prunus avium*	Semi-mature	4	1	150	No	2	2	2	2	3	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths. Stubs	Old pruning wounds. Minor deadwood	Pruned into shape	Good	Good	>40 yrs	Low	C	No works required to facilitate the development.

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	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T6	Cherry	*Prunus avium*	Semi-mature	5	1	130	No	2	4	3	2	3	No visual defects	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor deadwood. Moderate dieback	Slight lean south east	Fair	Fair	10 to 20 yrs	Low	C	No works required to facilitate the development.
T7	Cherry	*Prunus avium*	Semi-mature	4	1	130	No	2	2	3	3	4	No visual defects	Single stemmed. Slight lean. Stubs. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor deadwood. Moderate dieback	Slight lean east	Fair	Fair	10 to 20 yrs	Low	C	No works required to facilitate the development.
T8	Apple	*Malus sp.*	Semi-mature	5	1	200	No	2	3	3	3	5	No visual defects	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths. Tight union. Partially included bark	Old pruning wounds. Minor dieback. Minor deadwood. Cavities	Slight lean north west. Lots of epicormics growing around the base and stem	Fair	Fair	10 to 20 yrs	Low	C	Removal required to facilitate the development.
T9	Cherry	*Prunus avium*	Semi-mature	5	1	130	No	2	5	2	3	3.5	No visual defects	Single stemmed. Vertical. Stubs. Bark damage. Partially included bark. Tight union. Major cavities	Cavities. Minor deadwood. Moderate dieback. Old pruning wounds	Large cavity at base of stem and cavity at 1m. Snapping branch to south.	Poor	Poor	<10 yrs	Low	U	Removal recommended regardless of the development.
T10	Cherry	*Prunus avium*	Semi-mature	6	1	200	No	2	3	3	3.5	4	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths. Stubs	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	C	No works required to facilitate the development.

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	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T11	Sycamore	*Acer pseudoplatanus*	Semi-mature	6	2	70, 170	No	2	2	2	3	3.5	No visual defects	Twin stemmed at 0.5m. Vertical. Old pruning wounds. Stubs	Old pruning wounds. Minor deadwood. Minor dieback		Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T12	Ash	*Fraxinus excelsior*	Semi-mature	14	2	210, 320	No	2	3.5	5	2	4.5	No visual defects	Twin stemmed at 0.5m. Vertical. Epicormic growths. Old pruning wounds. Stubs	Moderate dieback. Minor deadwood	Moderate Ash dieback	Poor	Fair	<10 yrs	Low	U	Removal recommended regardless of the development.
T13	Ash	*Fraxinus excelsior*	Semi-mature	11	1	220	No	2	2	6	5	5	No visual defects	Single stemmed. Vertical. Epicormic growths. Old pruning wounds	Old pruning wounds. Minor dieback. Minor deadwood		Fair	Good	20 to 40 yrs	Low	C	Removal required to facilitate the development.
T14	Rowan	*Sorbus aucuparia*	Semi-mature	7	1	120	No	2	1.5	3	2.5	1	Limited access around base	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood	Slight lean south east. Hedge at base obscured inspection.	Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T15	Red Oak	*Quercus rubra*	Early-mature	16	1	430	No	2	5	8	7	5.5	Girdled roots	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Moderate	B	No works required to facilitate the development.
T16	Red Oak	*Quercus rubra*	Early-mature	15	1	400	No	3	5	7	3	6	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood. Snapped /hanging branches	Moderate snapped branch in northern crown	Good	Good	>40 yrs	Moderate	B	No works required to facilitate the development.

	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T17	Ash	*Fraxinus excelsior*	Semi-mature	7	2	100, 150	Yes	2	3	2	3	3	Limited access around base	Twin stemmed at base. Vertical. Stubs. Ivy covered	Minor dieback. Minor deadwood	Heavily ivy covered at base preventing detailed inspection	Fair	Fair	20 to 40 yrs	Low	C	No works required to facilitate the development.
G18	Cherry	*Prunus avium*	Semi-mature	6	7	100	Yes	2	See plan.				Self set Cherry group running along embankment. Fence adjacent to the north. Stems picked up and plotted where possible.				Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T19	Cherry	*Prunus avium*	Early-mature	14	1	370	Yes	3	5	6	7	5.5	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T20	Rowan	*Sorbus aucuparia*	Semi-mature	6	1	150	No	2	2.5	4	3	1.5	No visual defects	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood	Slight lean south east	Good	Good	20 to 40 yrs	Low	C	No works required to facilitate the development.
T21	Sycamore	*Acer pseudoplatanus*	Semi-mature	14	2	250, 150	Yes	2	3	3	5	4	Limited access around base	Twin stemmed at 0.5m. Vertical. Old pruning wounds. Epicormic growths. Stubs. Cup-like union collecting dirt/water	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
G22	Rowan and Sycamore	*Sorbus sp., Acer sp.*	Semi-mature	10	10	100	Yes	2	See plan.				Mixed species group of mostly Rowan with occasional Sycamore, Likely self set. Running along embankment with fence directly adjacent to the north. Stems picked up and plotted where possible.				Good	Good	>40 yrs	Low	C	Partial removal required to facilitate the development.

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	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T23	Cherry	*Prunus avium*	Early-mature	15	1	510	No	2	5	7	6	6.5	Exposed roots. Girdled roots	Single stemmed. Vertical. Epicormic growths. Old pruning wounds. Stubs	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	B	No works required to facilitate the development.
T24	Cherry	*Prunus avium*	Early-mature	15	1	560	No	2	6	5	6.5	6.5	Exposed roots. Girdled roots	Single stemmed. Vertical. Old pruning wounds. Epicormic growths. Stubs	Old pruning wounds. Minor deadwood		Good	Good	>40 yrs	Low	B	Removal required to facilitate the development.
T25	Red Oak	*Quercus rubra*	Early-mature	16	1	400	Yes	3	3.5	6	6	5	Limited access around base	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	B	No works required to facilitate the development.
T26	Rowan	*Sorbus aucuparia*	Semi-mature	7	6	100	No	1	2	3	4.5	3	No visual defects	Multiple stemmed at base. Vertical. Epicormic growths. Old pruning wounds. Tight union. Partially included bark	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	C	Removal required to facilitate the development.
G27	Silver Birch	*Betula pendula*	Semi-mature	13	6	100	Yes	2	See plan.				Group of planted Silver Birch with shrubs at base obscuring access and preventing detailed inspection.				Good	Good	>40 yrs	Low	C	Removal required to facilitate the development.

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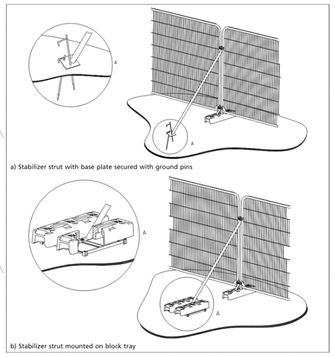
	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T28	Poplar	*Populus sp.*	Early-mature	16	1	280	Yes	0.5	5	4	5	4	Limited access around base	Single stemmed. Vertical. Epicormic growths. Old pruning wounds	Old pruning wounds. Minor deadwood	Part of stem is embedded in boundary fencing	Good	Good	>40 yrs	Low	C	No works required to facilitate the development.
T29	Red Oak	*Quercus rubra*	Young	5	6	100	No	1	2	2	2	2	No visual defects	Multiple stemmed at base. Vertical. Epicormic growths. Old pruning wounds	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	C	Removal required to facilitate the development.
T30	Black Pine	*Pinus nigra*	Early-mature	16	1	580	No	1	3.5	4.5	6	5	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	B	Removal required to facilitate the development.
T31	Red Oak	*Quercus rubra*	Early-mature	14	1	400	No	2	4	5	4	5	No visual defects	Single stemmed. Vertical. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor dieback. Minor deadwood		Good	Good	>40 yrs	Low	B	No works required to facilitate the development.
T32	Whitebeam	*Sorbus aria*	Early-mature	13	1	400	No	2	4	4	3	5	No visual defects	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths	Minor deadwood. Old pruning wounds	Slight lean south	Good	Good	>40 yrs	Low	B	No works required to facilitate the development.

	Tree Species			Measurements				Crown (m)					Tree Condition						Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Crown height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T33	Whitebeam	*Sorbus aria*	Early-mature	14	1	400	No	2	5	5	4	3	No visual defects	Single stemmed. Slight lean. Old pruning wounds. Epicormic growths	Old pruning wounds. Minor deadwood. Moderate dieback	Slight lean east. Moderate dieback in crown.	Fair	Fair	10 to 20 yrs	Low	C	No works required to facilitate the development.
G34	Silver Birch	*Betula pendula*	Early-mature	15	10	250	Yes	2	See plan.				Group of likely planted Silver Birch on roadside verge. Fence runs directly adjacent to south and road runs directly adjacent to north. Some stems and limbs have been removed leaving occasional pruning wounds with some decay.				Good	Good	>40 yrs	Low	C	No works required to facilitate the development.

Inset 1: 'Heras' Tree Protection Fencing



Inset 2: Warning Sign for Tree Protection Fencing

Inset 3: 'Plastic Mesh' Tree Protection Fencing

Inset 4: Ground Protection Boards

Existing fence provides adequate protection to trees at this side

NEW STAFF CAR PARK ENTRANCE / CROSS OVER

Heras' fencing to be moved to facilitate the installation of the new fence and then moved back and is to then remain in place for the rest of the development

Existing fencing provides adequate protection for T33

Path to be installed using 'no dig' methods detailed in AMS

EXISTING GOODS AREA ENTRANCE KERB LINES AMENDED / ACCESS DRIVE WIDTH INCREASED

Existing fencing provides adequate protection for T1 and T2

Plastic fencing to follow the edge of the trees' crowns

ADDITIONAL PARKING 50 SPACES

OFFICES AND CANTEEN

STAFF CAR PARK 134 vehicles

STAFF VEHICLE ACCESS

HGV 1

HGV 2

HGV 3

HGV 4

RIGID

SERVICE ROAD

Security Gate

CUSTOMERS CAR PARK 147 spaces

Drainage Channel

Line of existing drain to be removed.

Trolley Park

Motor Cycles

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34

G18 G22 G27 G34

Rowan Sycamore Birch Stem Shrubs Shrub

Pedestrian walkway

FOOD BULKER

CARD & PLASTIC

METAL

WOOD

SKIPS

NORTH

AWA TREE CONSULTANTS

Appendix 4:
Tree Protection Plan

Company Shop, Wentworth Way Industrial Estate, Barnsley
Ref: AWA6356

BRITISH STANDARD 5837:2012

SCALE: 1:500 PAPER: A2

	TREES TO BE RETAINED
	TREES TO BE REMOVED
	TREE STEM
	TREE STEM TO BE REMOVED
	'PLASTIC MESH' FENCING
	'HERAS' PROTECTION FENCING
	GROUND PROTECTION BOARDS
	RPA: ROOT PROTECTION AREA

PRESTO | GEOSYSTEMS®

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INSTALLATION GUIDE

simplified

GEOWEB® Tree Root Protection

Greenfix

Soil Stabilisation and Erosion Control Specialists

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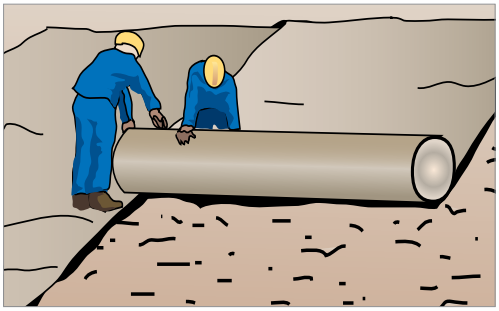
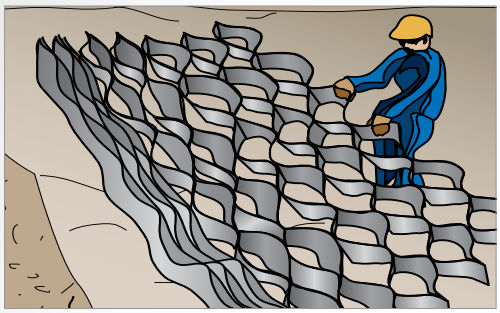
INSTALLATION GUIDE
simplified version

1 Prepare subgrade. Remove debris, rocks.

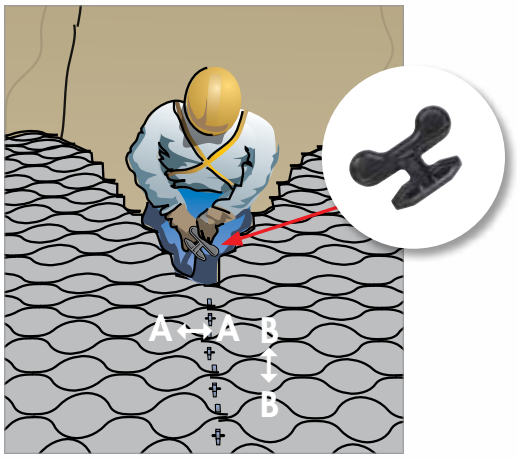
2 Install TRP4000 geotextile.
Overlaps by minimum 300 mm.



3 Partially expand GEOWEB® sections.

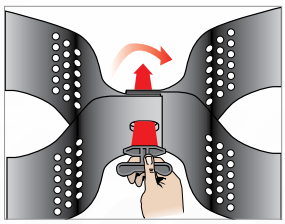


4 Connect GEOWEB® sections with ATRA® keys.

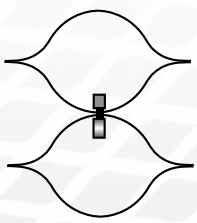


5 Connect side to side (A) and end to end (B).

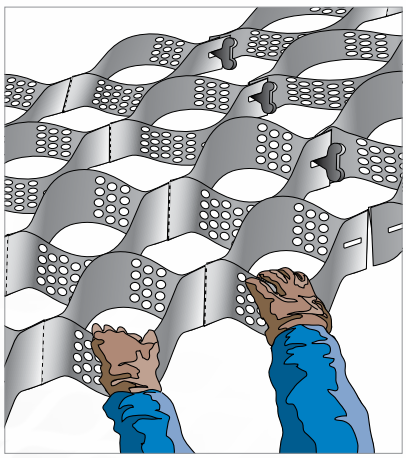
A



B



6 Fully expand GEOWEB® sections.

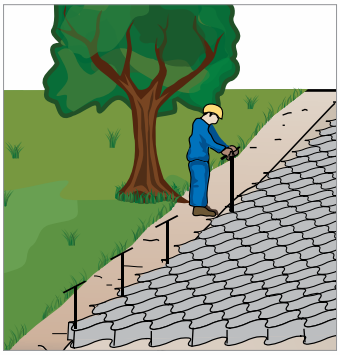


IMPORTANT NOTE:

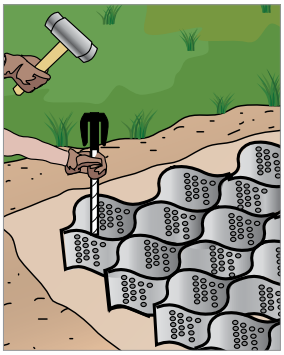
The simplified installation guide provided by Presto GEOSYSTEMS® is intended as a general guideline only. The contractor should follow contract plans and specifications and refer to detailed installation guidelines for more information.

7 Hold sections open. Use Options A, B, C or D.

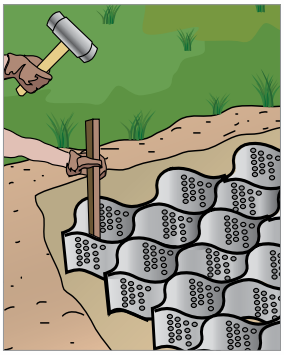
A T-Bars



B ATRA® anchors

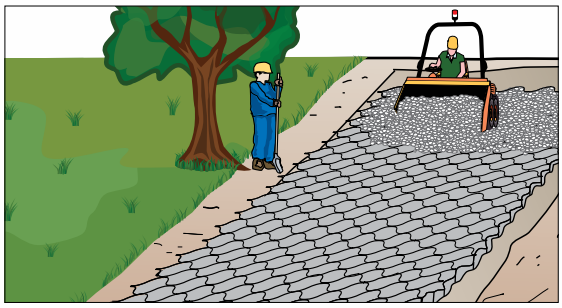


C Wood Stakes

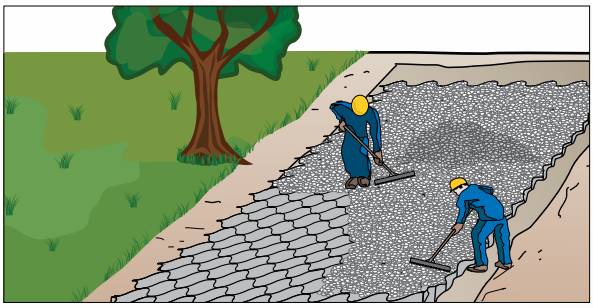


D Infill Select Cells

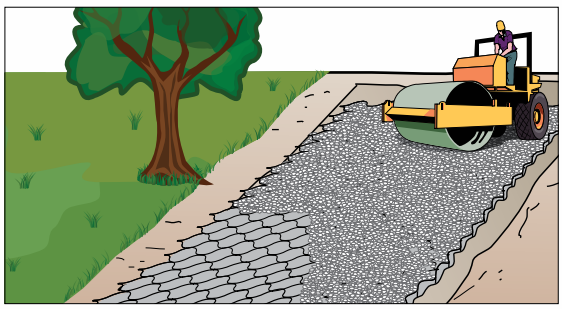
8 Infill GEOWEB® cells.



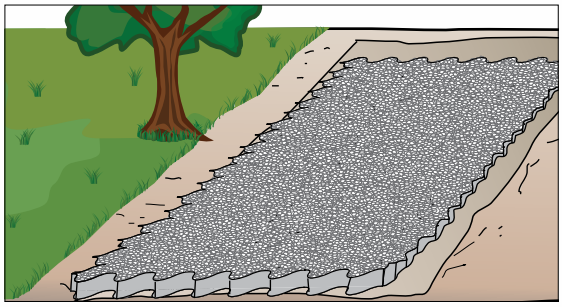
9 Spread Infill ensuring a 25 mm overfill at all times.



10 If required, use a 4t smooth, non-vibrating roller on overfilled GEOWEB® system. Refill as needed to ensure a 25 mm overfill.



11 Surface option ready to install according to specification.



Greenfix
Soil Stabilisation and Erosion Control Specialists

info@greenfix.co.uk
tel. 01608 666027
www.greenfix.co.uk

Geoweb infill material for Tree Root Protection

Clean Angular Stone 4-20mm

Specification for open graded infill material for Geoweb cellular confinement within tree root protection applications. The no fines material is to ensure high ratio void space which corresponds with ideal soil void ratios for tree root health.

Material to BSEN1342 or BSEN12620. Crushed gravel is not permitted.

Properties of material	Test	Value
Grading of particle size	BSEN 13242	Grading 4-20mm
Fines Content	BSEN 13242	f_4
Shape flakiness index	BSEN 13242	FI_{20}
Resistance to fragmentation	BSEN 13242	LA_{30}
Resistance to wear	BSNE 13242	$M_{DE}20$
Water absorption rate BSNE 1097-6:2000 clause 7	BSNE 13242	$WA_{24}2$
For typical WA>2% magnesium sulphate soundness	BSNE 13242	MS_{18}
Acid soluble sulphate content air-cooled blast furnace slag	BSNE 13242	$AS_{0.1}$
Acid soluble sulphate content non air cooled blast furnace slag	BSNE 13242	$AS_{0.2}$
Total sulphur aggregates other than air cooled blast furnace slag	BSNE 13242	<1% by mass
Total sulphur air cooled blast furnace slag	BSNE 13242	<2% by mass

Sieve Size mm	Percentage of 4-20mm passing
40	100
31.5	98 - 100
20	90 - 99
10	25 - 70
4	0 - 15
2	0 - 5
1	-

GEOWEB®

Air cooled blast furnace and steel slag should be free from Dicalcium silicate and iron disintegration in accordance with BSEN 13242:2002, 6.4.2.2 V5
Leaching of materials for blast furnace slag and other recycled materials should meet requirements of the Environmental waste acceptance criteria for inert waste when tested in accordance with BSEN 12457-3

On poor site conditions which require compaction, this should be minimum 4 passes of a smooth wheeled roller at max weight 1000kg/m width without vibration.

For assistance on correct 4–20mm clean angular stone infill specification, please contact Greenfix technical team.

GEOSYSTEMS®

MATERIALS SUPPLIED BY Greenfix

GEOWEB®

TRP4000
Non-woven Geotextile

ANCHORS

ATRA® KEY

ADDITIONAL MATERIALS REQUIRED

4–20mm clean, angular stone

LIMITED WARRANTY

Presto GEOSYSTEMS® warrants each GEOWEB® section which it ships to be free from defects in materials and workmanship at the time of manufacture. Presto's exclusive liability under this warranty or otherwise will be to furnish without charge to Presto's customer at the original f.o.b. point a replacement for any section which proves to be defective under normal use and service during the 10-year period which begins on the date of shipment by Presto. Presto reserves the right to inspect any allegedly defective section in order to verify the defect and ascertain its cause.

This warranty does not cover defects attributable to causes or occurrences beyond Presto's control and unrelated to the manufacturing process, including, but not limited to, abuse, misuse, mishandling, neglect, improper storage, improper installation, improper alteration or improper application.

PRESTO MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, IN CONNECTION WITH THE GEOWEB® SYSTEM. IN NO EVENT SHALL PRESTO BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR FOR ANY OTHER REASON, INCLUDING NEGLIGENCE, IN CONNECTION WITH THE GEOWEB® SYSTEM.

GEOWEB® MANUFACTURER:

Presto®

PRESTO GEOSYSTEMS®
Appleton, Wisconsin, USA

EU HEAD OFFICE/ENGINEERING SUPPORT:

SOILTEC GEOSYSTEMS®

SOILTEC GmbH: Germany
www.soiltec-geosystems.de

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Soil Stabilisation and Erosion Control Specialists

Greenfix Soil Stabilisation & Erosion Control Limited
Old Manor Farm Yard
Beckford Road
Ashton under Hill
Evesham
Worcestershire
WR11 7SU
info@greenfix.co.uk
www.greenfix.co.uk
01608666027

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