Land at Uttoxeter Road
Upper Tean
Stoke-on-Trent

Belmont Investors

ARBORICULTURAL IMPACT ASSESSMENT
AND
METHOD STATEMENT

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1.0 Introduction

1.1 This document has been prepared by Trevor Bridge Associates on the behalf of Belmont Investors. It provides an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS) in regards to the following proposed development.

- Construction 55 residential properties and related infrastructure.

1.2 This document follows, and should be read in conjunction with, a pre-development tree survey that was undertaken by TBA Ltd in September 2017, and revised in January 2018 and July 2018 (ref: MG/5553/TSR/REV C/JUL17). Accompanying the tree survey report is a drawing; ***Tree Survey and Root Protection Plan*** (ref: 5640.01 Rev B).

1.3 For the purposes of preparing this document the following material was referenced:

- MPSL Planning & Design Ltd drawing: ***Planning Layout. Job No. 17068. Drg. No. 01. Rev. E. Date: 06.07 2018.***

1.4 This report assesses the potential impacts to trees as a consequence of the development proposals, as well as specifying the necessary methodologies required during construction to ensure that trees being retained are afforded adequate protection from harm.

1.5 Accompanying this report is the following drawing which must be read in conjunction with this report:

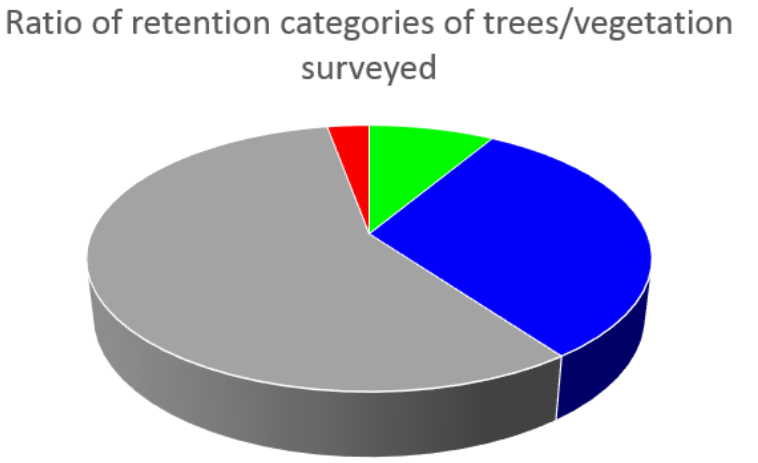
- ***TBA Drawing: Tree Protection Plan. Drawing No. 5553.02. Date: July 2018.***

2.0 Arboricultural Impact Assessment

2.1 The consequences on existing trees situated within and adjacent the proposed development site are considered.

2.2 The value of the trees and vegetation surveyed

In the initial tree survey report a total of 35 items were surveyed within and adjacent the development site. These items comprised 14 individual trees, 11 groups & 10 hedges. The chart and table below shows the ratio of tree retention categories on the site and number of items (be it groups or individuals etc that were surveyed).



Retention Category	No.
A (High Value)	3
B (Moderate value)	11
C (Low value)	20
U (Remove)	1

3.0 Arboricultural Impact Table - Key

3.1 The Arboricultural Impact Table (section 3.3) lists all items surveyed within the site. The tree data is taken from the initial tree survey report. The table is colour coded for ease of reference, particularly in relation to the value of trees and the potential impact that may occur to them:

Tree Values

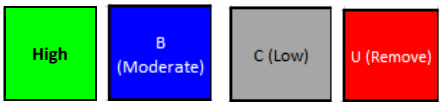
High	High value tree / group / hedge as included within the initial tree survey
B (Moderate)	Moderate value tree / group / hedge as included within the initial tree survey
C (Low)	Low value tree / group / hedge as included within the initial tree survey
U (Remove)	Tree / group / hedge in poor condition. Retention unsustainable within context of development

Impacts on Tree's / Groups

Removal	Tree / Group / Hedge will require removal in order to facilitate the development proposals
Partial Removal	Group or hedge will require partial removal to facilitate the development proposals
High	The development proposals will have a high impact the on the tree /group / hedge
Moderate	The development proposals will have a moderate impact on the tree / group /hedge
Low	The development proposals will have a low impact on the tree / group / hedge
None	The development proposals will have no impacts on the tree / group / hedge

3.2 Arboricultural Impact Table - Cascade Chart:

3.2.1 Tree **Values** are taken from BS: 5837 and comprise of the following:



3.2.2 The **Impacts** comprise of 6 elements:

3.2.3 Causes of impacts comprise of 6 factors: '***None***', '***To facilitate development'***, '***Due to poor condition'***, '***Direct disturbance to roots'***, ***'Pruning required'*** **and** '***Possible future pruning pressure due to shade and other factors***'.

3.2.4 Comments are also included providing more information where necessary.

	REMOVAL	PARTIAL REMOVAL	HIGH	MODERATE	LOW
TO FACILTATE DEVELOPMENT	Tree / group requires removal.	Partial removal of group is required. I.e., 'a section of hedge may require removal to allow a new access road'.	N/A	N/A	N/A
DUE TO POOR CONDITION	Tree or group require removal due to poor structural and / or physiological condition.	Part of group require removal due to poor structural and / or physiological condition.	N/A	N/A	N/A
DIRECT DISTURBANCE TO ROOTS	N/A	N/A	In many case this will result in the loss of tree/s - refer to '**TO FACILIATE DEVELOPMENT**'. In rare cases a Tree/s may be retained but damage will occur to the roots.	Disturbance will be caused to roots of a tree/s that are likely to result in some physiological and structural dysfunction. The extent of damage does not require trees to be felled. Remedial actions may be taken in some cases that would help mitigate against damage but site topography, tree age, condition and species condition may result in disturbance being considered **MODERATE** as opposed to **LOW.**	Activity will occur within the root protection area of trees which will have a low impact, or can be mitigated by special measures.
PRUNING REQUIRED	N/A	N/A	Pruning that may retain a tree but will have a potential impact on the tree condition and visual appearance	Pruning is required that is acceptable within recommendations within BS3008:2010, but would require a material alteration to the tree/group affected.	Pruning is required that will have little impact to the structural, physiological and visual amenity of a tree or group.
POSSIBLE FUTURE PRUNING PRESSURE DUE TO SHADE OR OTHER FACTORS	Removal of tree/s required as retention is unsustainable and/or undesirable within the context of development. i.e. fast growing tree in small garden.	Partial removal of tree/s required as retention is unsustainable and/or undesirable within the context of development. i.e. fast growing tree in small garden.	Tree/s likely to cause significant shading. i.e. small garden areas with dense mature trees to south.	Some level of shade or other inconvenience will occur. Not highly oppressive, but some residents may seek management of trees in long term.	Some level of shading / overhang will occur.

3.3 ARBORICULTURAL IMPACT TABLE - RESULTS

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
1H	Mixed species Hedge	B (Moderate)	**Partial Removal**	**To facilitate development**	Tree protection fencing required.	Tree protection fencing required.
2T	Sycamore	B (Moderate)	Low	**Pruning required**	Restructure the canopy by reducing the lateral branch spread over road by some 2.5m in length. Also reduce the overextending branch within the upper canopy (to the east field side) by some 3.0m, the over extending branch to the south-east by some 3.5m.	Tree protection fencing required.
3T	English Yew	**A (High)**	Moderate	**Direct disturbance to roots**	Proposed access path within the root protection area of the tree. The majority of the path can be constructed using a non-dig construction, but due to a small embankment being present adjacent the boundary, regrading will be necessary to construct the path to an acceptable gradient. This will result in excavation within the RPA. **The path should be relocated to sweep to the outer section of the RPA and pass onto the road either at the mid-point between 2T and 3T, or pass to the outer section of 2T (in a northerly direction), then access the existing footway outside of any RPA's.**	Tree protective fencing required.

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
4T	Silver Birch	C (Low)	None	N/a	Tree protection fencing required.	N/a
5T	Hawthorn	B (Moderate)	None	N/a	Tree protection fencing required.	N/a
6T	Common Oak	C (Low)	None	N/a	Tree protection fencing required.	N/a
7T	Common Oak	C (Low)	None	N/a	Tree protection fencing required.	N/a
8G	Matured Hawthorn row	C (Low)	None	N/a	Tree protection fencing required.	Row to be retained and consolidated with new planting to form boundary screening, and green corridor.

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
9T	Sycamore	A (High)	Low	Pruning required	Crown lift the lower canopy all around to provide approximately 3m clearance above ground level. This is to be achieved by primarily removing secondary and tertiary branches.	N/a
			Low	Possible future pruning pressure due to shading and/or other factors	Ongoing cyclic pruning will be necessary to provide clearance of lower branches. While the tree canopy occupies a section of the garden areas of both plots 13 and 14, there remains adequate utilisable garden area outside the canopy spread. The aspect of the tree relative to the proposed plots will not significantly result in loss of direct sunlight to houses of gardens.	N/a
10T	Hawthorn	B (Moderate)	None	N/a	Tree protection fencing required.	N/a
11G	Group of Elderberry and Hawthorn	C (Low)	None	N/a	Tree protection fencing required.	N/a

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
12G	Group of Elderberry, Hawthorn and Holly.	C (Low)	None	N/a	Tree protection fencing required.	N/a
13H	Native Hedgerow	C (Low)	Removal	To facilitate development	N/a	N/a
14G	2x Hawthorn	C (Low)	Removal	To facilitate development	N/a	N/a
15T	Hawthorn	C (Low)	Removal	To facilitate development	N/a	N/a
16T	Hawthorn	U (Poor)	Removal	Due to poor condition	N/a	N/a
17G	3x Hawthorn	C (Low)	None	N/a	Tree protection fencing required.	N/a

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
18G	Group of Holly	C (Low)	None	N/a	Tree protection fencing required.	N/a
19H	Native Hedgerow	B (Moderate)	Partial Removal	To facilitate development	The majority of this hedge will require removal.	N/a
20H	Native Hedgerow	B (Moderate)	None	N/a	Tree protective fencing required.	N/a
21G	Group of Plum Trees.	C (Low)	Removal	To facilitate development	N/a	N/a
22H	Native hedge.	B (Moderate)	None	N/a	Tree protection fencing required.	N/a
23G	Group of Hawthorn	B (Moderate)	None	N/a	Tree protective fencing required.	N/a

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
24T	Sycamore	B (Moderate)	None	N/a	Tree protective fencing required.	N/a
25T	Hawthorn	C (Low)	None	N/a	Tree protection fencing required.	N/a
26G	Mixed species Hedge	C (Low)	None	N/a	Tree protection fencing required.	N/a
27G	Hawthorn thicket	C (Low)	None	N/a	Group is situated outside the site.	N/a
28H	Mixed species Hedge	B (Moderate)	**Partial Removal**	**To facilitate development**	Section requires removal for site access.	N/a
29H	Hawthorn Hedge	B (Moderate)	None	N/a	Hedge is situated outside the site.	N/a

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
30H	Leyland Cypress and Cherry Laurel.	C (Low)	None	N/a	Hedge is situated outside the site.	N/a
31H	Beech hedge	C (Low)	None	N/a	Hedge is situated outside the site.	N/a
32H	Leyland Cypress Hedge	C (Low)	None	N/a	Tree protection fencing required.	N/a
33G	Mixed Species Group	C (Low)	Removal	To facilitate development	N/a	N/a
34T	Elm	C (Low)	Removal	To facilitate development	N/a	N/a

Ref No.	Species	Value	Impact	Impact Cause	Management Options / Comments	Other
35T	English Yew	**A (High)**	Low	**Direct disturbance to roots**	New access to be constructed adjacent this tree. The existing footway is to be linked to access footway. New gradients are required required for the access, included the path. Partial ingress within the root protection area of the tree will occur.	The section around the tree to be fenced off prior the onset of site works. On completion of tree works within the site, the excavation adjacent 36T is to be undertaken under **the direct super vision of the project arboriculturalist** to ensure that minimal disturbance is caused. The side embankment of exposed soil is not to be graded back but must be supported with a retaining structure. Any retaining structures are to be constructed using a minimal footprint, thus retaining structures cannot utilise a trench foundation, but must utilise mini-piles. A foundation design is to be submitted to the LPA for approval prior to any works proceeding.

4.0 General Issues

4.1 Installation of underground services

At the time of considering the layout design, no information was available relating to the proposed location of underground services. By default no services should be placed within the identified Root Protection Areas of trees being retained. While it is possible in some cases that underground services may be placed within Root Protection Areas, this is best done under arboricultural supervision (at least initially) and must follow industry best practice (see section 5.7.9). Where special installation methods are necessary (such as pipe jacking) supplementary method statements must be provided. The proposed location of underground infrastructure must be made available to the local planning authority prior to installation.

4.2 Storage of materials, contractor parking and site logistics

Logistically the site has adequate space for the placement of site huts and material storage. By default all compounds and storage areas are to be outside root protection areas.

4.3 Level changes on site

No excavation or raising of ground levels are to occur within the construction exclusion zones within the site demarked by tree protection barrier fencing (green coloured zones) within the Tree Protection Plan. Use of retaining structures may be required if a ground level differential is required between the developed section of the site the tree protection areas. Such retaining structures may, for example, comprise Gabions, or treated wooden posts.

4.4 Installation of 'non dig' hard surfaces

It is proposed that non-dig surfaces are constructed using a product called Cellweb; a three dimensional cellular confinement system. The company that supplies Cellweb (Geosynthetics Ltd) will need to supply specifications based on the soil conditions. Further details are included within the Arboricultural Method Statement Schedule (section 6.0).

4.4.1 The successful installation of Cellweb requires that existing ground levels, where the product is being installed, are not, in any way, excavated. The installation of Cellweb will result in final raised levels, as the product itself is three dimensional. Additionally, use of a final layer, such as porous tarmac, will also raise the final levels. Therefore, where Cellweb is specified in areas where adjacent construction is to occur, be it adjacent roads, driveways or buildings, the final level of the Cellweb must take precedence in determining all adjacent levels.

5.0 Arboricultural Method Statement

5.1 The Arboricultural Method Statement (AMS) specifies all measures to be undertaken to ensure the ongoing health and viability of trees to be retained within the proposed development.

5.2 This AMS is in compliance with British Standard 5837: 2012**. Accompanying this document is a plan that shows the position of protective fencing and any additional special measures that are required. This plan is referred to as the *Tree Protection Plan*.**

5.3 The AMS must be considered a 'working document'. It must be made available to the developer, site manager, and LPA. A copy of this document and the Tree Protection Plan must be kept on the development site at all times. All site operatives must be briefed on the main contents of this document.

5.4 It is the Site/Project Manager's responsibility to ensure that the detail of this AMS and the TPP and any agreed amendments are known and understood by all site personnel. A copy of this AMS and the TPP will be available for reference on site by the Project and Site Managers, and will form the basis of the management of all works relating to the trees on the site following commencement of the project. The Site Manager shall induct all personnel who could have an impact on trees on the content of this document.

5.5 Tree Works –General Issues

5.5.1 All tree works (tree felling and pruning) are to take place prior to any site operations and immediately before the installation of protective fencing.

5.5.2 All works to the existing trees are to be carried out by a fully qualified tree surgeon and in accordance with BS 3998 (2010) *Recommendations for Tree Work*.

5.5.3 The necessary tree surgery works should be carried out **before** any construction work starts and immediately before erection of protective fencing. Any works will include any trees that require removal in order to facilitate construction and access. No tree works must be carried out unless permission is provided by the local planning authority. Tree works to any protected trees (trees within a Conservation Area or subject to a Tree Preservation Order) that do not require works to directly enable the development to proceed will require a notification/application to be made to the Local Planning Authority. Any tree works required in order to directly facilitate the development to proceed (such as tree felling) must not proceed unless full planning consent and written consent is given by the local planning authority.

5.5.4 Wildlife issues and timing of operations. The following must be observed:

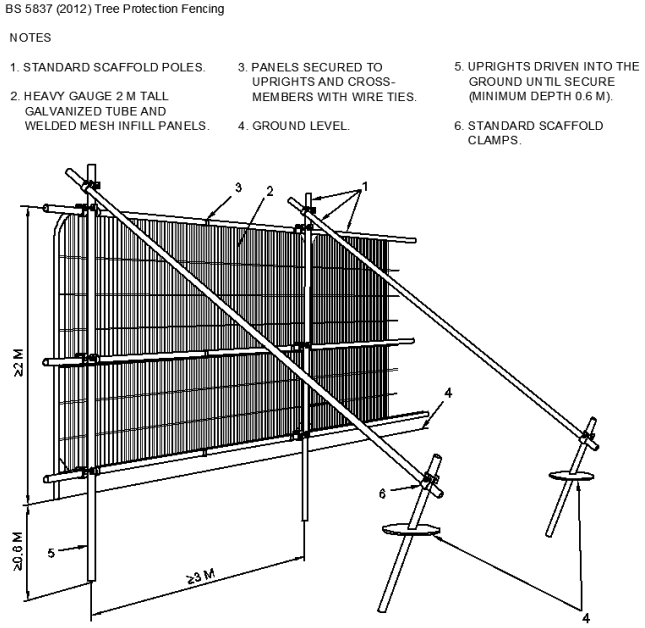
Bats. Under current legislation it is an offence to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat'. For further details consultation must be made with the Statutory Nature Conservancy Organisation (Natural England, 0300 060 1842 www.naturalengland.org.uk). Where relevant any current ecological surveys for the site will take precedence in this matter.

5.5.5 Birds. It is an offence to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore work likely to disturb nesting birds should be avoided from late March to August.

5.6 Tree Protective Barrier Fencing

5.6.1 Protective barriers must be erected prior to any site operations. The protective barriers are essential to prevent root severance or compaction of the soil in the Root Protection Areas, and so give the best chance of continued good health of the retained trees.

5.6.2 Tree protective barriers are to comprise a vertical and horizontal scaffold framework which is braced to withstand impacts, and not easily moved or relocated by site operatives (to prevent opportunistic moving of the barrier fences). The vertical tubes should be spaced at intervals of no more than 3m and driven securely into the ground. Onto this framework welded mesh panels should be securely fixed (such as Heras). The fencing is to be placed accurately as shown within the Tree Protection Plan. A scale copy of the tree protection plan shall be referenced and scale measurements taken to indicate the necessary fencing positions.



Care must be taken when locating vertical poles to avoid underground services and, in the case of bracing poles, also to avoid contact with structural roots. If the presence of underground services prevents the use of driven poles, an alternative specification should be prepared; such alternatives could include the attachment of the panels to a free standing scaffold support framework.

Where fencing is required adjacent the site boundaries it is acceptable to use Hoarding to double as protective fencing but only where the exact location of the protective fencing is adhered to (as per the Tree Protection Plan) and where it is hand installed only.

5.7 General Requirements

5.7.1 Developers must enforce the methods of protection identified within the statement. All contractors must also agree to them. Any failure to comply with them must be dealt with by the developer. Any damage that may occur to trees due to failure to observe the method statement must be reported to the Local Planning Authority and arboricultural advice must be sought.

5.7.2 No pruning, lopping, felling or severance of roots is to take place without prior consent of the local authority or unless in compliance with specifications included within the Method Statement.

5.7.3 **The ground levels within the protected areas, be they fenced or special working areas, must neither be raised nor excavated unless specifically in compliance with requirements within this method statement.**

5.7.4 No ropes, cables, services, or notice boards shall be fixed to existing trees.

5.7.5 Fires should not be permitted, or else not lit where flames could extend to within 10m of the foliage, branches or trunk of any trees (it should be noted that local environmental health authorities may have specific restrictions on fires),

5.7.6 Should temporary access within the Root Protection Area be required that is not included within the method statement, an agreement, in advance, with the consultant and the LPA must be made. The fence may need to be re-aligned and the ground surface protected. For vehicular access this protection will need to be specifically detailed and agreed.

5.7.7 Care must be taken in regards to tall or wide loads, or use of plant with booms, jibs and counterweights. Where machinery may be required to operate in the vicinity of trees a banksman must ensure that no direct physical damage is caused to trees. It must be checked that any materials or vehicles entering the site are able to do so without causing damage to adjacent trees.

5.7.8 Any material that will contaminate soil (e.g. concrete mixings, and vehicle washings) must not be discharged within 10m of any Root Protection Area. In addition it is essential that allowance be made for the slope of the ground so that damaging materials cannot run towards trees, or Root Protection Areas. If diesel and fuel containers are used or stored on site they must be kept within a plastic container bund to prevent any ground contamination and spill kits must be kept available to remediate any spillage.

5.7.9 Where trenching may be required for the placing of underground services all works must adhere to ***Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (NJUG4***). National Joint Utilities Group, 2007. This document is freely available online (www.njug,org.uk/publications/).

5.8 Arboricultural monitoring

(i) The arboricultural consultant (or local authority Tree Officer) shall be consulted whenever an unexpected issue occurs that involves any retained tree on site including access within the Protection Area.

Mike Gregory (Arboricultural Consultant) 07515827944.

(ii) No amendments shall be made to the methods detailed in this Arboricultural Method Statement without the agreement of the consultant or local planning authority Tree Officer.

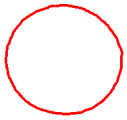
(ii) If the site agent is at all unclear about exact compliance with any of the above requirements, or if requested by any other party, then a pre-start meeting shall be arranged with the architect, site agent, local authority tree officer and arboricultural consultant in attendance as necessary.

5.9 Health and Safety Issues

All operations must be carried out with full regard to Health and Safety requirements. Due to the diverse nature of recommendations included (e.g. tree surgery works, construction etc) it is necessary that supervisors of those undertaking recommended operations undertake risk assessments prior to starting the relevant works. It should be the Site Managers/developers responsibility to ensure that risk assessments are submitted prior to undertaking relevant works.

6.0 Method Statement Schedule

<table>
<tr><th>Phase</th><th>Requirements</th><th>Method</th></tr>
<tr><td>1
Prior to erection of protective fencing.</td><td>Undertake tree and vegetation felling and pruning

Trees/vegetation to be removed:
  </td><td>Refer to section 5.5 of AIA/MS report.

All tree works to be carried out to BS3998: 2010: by suitably qualified and insured professional tree surgeons.

The following tree felling <u>must</u> be undertaken at this Phase:

<table><tr><th colspan="2">Items requiring removal:</th></tr><tr><td>1H</td><td>Mixed Species Hedge (at location of the pavement access from existing footpath)</td></tr><tr><td>13H</td><td>Native Hedgerow</td></tr><tr><td>14G</td><td>2x Hawthorn</td></tr><tr><td>15T</td><td>Hawthorn</td></tr><tr><td>16T</td><td>Hawthorn</td></tr><tr><td>19H</td><td>Native hedgerow (Partial removal only – refer to plan)</td></tr><tr><td>21G</td><td>Group of Plum trees</td></tr><tr><td>28H</td><td>Mixed Species Hedge (Partial removal only – refer to plan)</td></tr><tr><td>33G</td><td>Mixed Species Group</td></tr><tr><td>34T</td><td>Elm</td></tr></table>
The following tree pruning <u>must</u> be undertaken at this Phase:

<table><tr><th colspan="2">Items requiring pruning:</th></tr><tr><td>2T</td><td>Sycamore. Restructure the canopy by reducing the lateral branch spread over road by some 2.5m in length. Also reduce the overextending branch within the upper canopy (to the east field side) by some 3.0m, the over extending branch to the south-east by some 3.5m.</td></tr><tr><td>9T</td><td>Horse Chestnut. Crown lift the lower canopy all around to provide approximately 3m clearance above ground level. This is to be achieved by primarily removing secondary and tertiary branches.</td></tr></table></td></tr>
<tr><td>2
Prior to any construction works on site</td><td>Erection of protective fencing:

To retain throughout the duration of the development:
</td><td>Protective fencing is to be erected in accordance with 5.6 of AIA/MS report.

The fencing must comply with the positions shown in the Tree Protection Plan. A scale copy of the Tree Protection Plan must be used as reference and fencing positions measured from the Plan using a scale rule.

No works, no storage of materials, no access, or any ground disturbance is to take place within the Tree Protection Barrier Fencing other than works specified within the Arboricultural Method Statement. Fenced areas are to be treated as Construction Exclusion Zones.

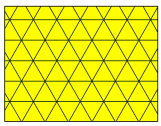
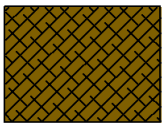
Warning signs to be placed on all protective fencing. For large sections of fencing the signs must be placed at 20m intervals.

Signs must be laminated and securely attached at all corners. Two signs are to be placed side by side; copies of which are attached within Appendix A.</td></tr>
<tr><td>3
Verifying quality of protective barriers</td><td>Verify that the location and quality of tree protection barriers is adequate prior to onset of main site works.</td><td>Site visit with Arboricultural Consultant and Site Manager.

Tree Officer to be pre-informed of visit.

In order for set works to proceed the pro-forma in Appendix B. of the AIA/AMS report is to be completed and passed on to the local planning authority:

If the protective barriers are not adequately, work is not to proceed until rectified.</td></tr>
</table>

Phase	Requirements	Method
4 Ongoing	Maintain protective fencing	The tree protective barrier fencing is to remain in situ during all demolition and construction works.
5 Installation of geotextile cellular confinement systems	Installation of geotextile cellular confinement systems. 	Installation of non-dig pavement surface: A three dimensional cellular confinement system is to be utilised (Cellweb). Guidance for the installation of the Cellweb is attached within **Appendix C**. Cross section details are to be provided (in conjunction with engineer and Cellweb recommendations). Technical specifications required, as well as cross section details relevant to the site can be provided by Cellweb suppliers, Geosynthetic (01455 617139). Email Sales@geosyn.co.uk. Tree barrier protective fencing is to be relocated to the side of the zone where the Cellweb is to be located only **immediately prior** to the installation of the Cellweb. The installation is to be carried out **under Arboricultural Supervision**. The ground layer in which Cellweb is to be installed is to be subject only to removal of exiting turf layer. Adjoining levels must marry with the required depth of the Cellweb, not vice versa.
6 Remediation of soil area within Pines	An area surrounding, 2T & 3T to be ameliorated with composted woodchip mulch to improve soil conditions. 	A single section of the tree protection fencing is to be removed to allow access immediately before placement of mulch is to occur. All works within the root protection area are to be carried out by hand with pedestrian access permitted only. All existing turf within the area to be mulched is to be removed. This is to be done using spades. Only the upper grass turf layer is to be removed (no underlying soil). A layer of composted wood-chip mulch is to be laid down. Wood chip to be transported into the area and raked flat into a consistent layer no more than 100mm depth. Woodchip is not to be placed immediately adjacent any tree trunks (a gap of 300mm from any root-collar must be maintained).
7 Completion of main construction and undertaking of landscaping	Landscaping and Dismantling of tree barrier protective fencing.	It is essential that ground levels within the root protection areas are not altered, either by raising or lowering soil levels; even at the landscaping stage. Landscaping operations must be undertaken in a manner that will not impact trees. Landscaping within the root protection area of trees must be undertaken in the following manner: 1. Any existing ground flora (grass/weeds/scrub) is to be sprayed with a systemic herbicide and left to die-off. 2. Dead flora is to be strimmed as hard as possible with a brush cutter or similar. The bulk of the strimmed material is to be removed by raking. 3. A good quality organic topsoil layer may be placed down. Small depressions may be filled (and **lightly** compacted underfoot). Placed topsoil soil layers **must not exceed** 100mm depth. 4. No plant machinery operating within the root protection areas to exceed 1 tonne gross weight and must only operate from propriety ground protection boards such as DuraMatt Access Matts (see Appendix D). 5. Turf and other planting to proceed thereafter.

APPENDIX A - SIGNS TO ATTACH TO PROTECTIVE FENCING

APPENDIX B – Site Inspection pro-forma

SITE INSPECTION - ARBORICULTURAL METHOD STATEMENT (Ref: MG.5553.AIA&AMS.REV A.JUL18)

Site Address : **Land at Uttoxter Road, Upper Tean, Stoke-on-Trent**

Name of Arboricultural Inspector:

Date of Inspection:

The purpose of this site inspection is to confirm with requirements within the above referenced Arboricultural Method Statement.

The site is to be visited and the placement of tree protection barrier fencing checked for compliance with specifications within the method statement.

Further works on the site shall not proceed until the tree protective fencing is installed in compliance with the method statement and in submitting this document to the Local Planning Authority the inspector is verifying that the necessary specifications have been met.

Notes (continue on separate attachments as necessary):

Photographs: (attach below):

APPENDIX C – OUTLINE SPECIFICATION FOR INSTALLATION OF CELLWEB

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 Treetex® T-300

Step 3: Layout 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 the Treetex® T-300 Non-Woven Geotextile

- Lay the Treetex® T-300 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 the Cellweb® TRP Cellular Confinement System

- Lay the collapsed Cellweb® TRP on-top of the Treetex® T-300.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.

Cellweb® TRP - Installation Guide

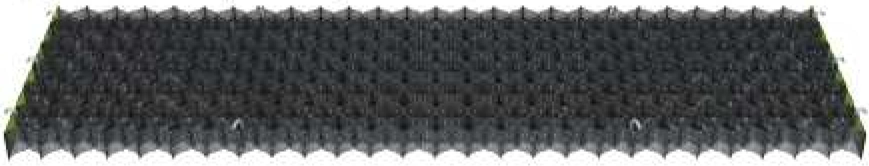
Step 3: Pinning Cellweb® TRP

Step 3: Stapling Cellweb® TRP

- Pull out the Cellweb® TRP to its full 8.1m 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.
  (3 pins at each end of the panel and 2 pins on each side)



- 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.

[illegible] (Page 2 of 3)

Cellweb® TRP - Installation Guide

Step 4: Clean Angular Stone

Step 5: Edge Restaints

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.
- 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 Non-Woven Geotextile T400 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.

DR: 01/V1/18.08.14 (Page 3 of 3)

APPENDIX D – GROUND PROTECTION BOARDS

(to be used for light plant access when undertaking temporary operations within the root protection areas of trees- such as fencing and landscaping)

DuraMatt Single Sided Access Mat - 2400mm x 600mm x 10mm - 17kg

Product Code: DURA-240060017SS

MultiMatts are the market leading provider of temporary access and ground protection solutions. Temporary Access and Ground Protection Mats are now an essential requirement for the construction, civil engineering and groundwork industries, although they're also used extensively within the festival and outdoor event sectors.

Our DuraMatt - Light/Medium Duty Access Mat is manufactured from 100% recycled Low Density Polyethylene (LDPE) and weigh just 17kg. DuraMatt is ideal for both short and long term projects and can be used in a variety of applications.

DuraMatt is capable of taking weights of 15-20 tonnes* depending on the ground conditions, they've also been designed with a connection hole in each corner should the mats need to be connected together.

DuraMatt has a unique diamond pattern "non-slip" surface on one side, the other side has been left smooth for working on hard standing areas and sensitive grass, it also allows contractors to use the mat as a spoil board for construction materials. It's flexible nature allows the mats to follow the contours of the ground to deliver highly effective access over undulating or sloping terrain.

Standard colour option is Grey – Please contact us for other colours or customisation.

Key Applications

- Ground Work Spoil Boards
- Temporary Roadways and Car Parks
- Pedestrian Walkways
- Heritage sites; Eco-Sensitive areas
- Sports and Leisure Events
- Golf Course and Sports Field Maintenance
- Ground Protection
- Emergency Access Routes
- Utilities
- Infrastructure Maintenance

Key Features and Benefits

- 2.4m x 0.6m x 10mm - Weight 17kg
- Maximum Weight loading approx. 15-20 tonnes*
- Unique diamond pattern "non-slip" surface for optimal grip
- Avoids health and safety issues
- Avoids property, heritage and environmental damage and reinstatement
- Avoids vehicles becoming bogged down
- Low transportation and handling costs
- Various connection options for different ground conditions and equipment
- Premium 100% recycled (LD) polyethylene which is 100% recyclable