

**Arboricultural Report
BS5837:2012 Trees in Relation to
Design, Demolition and Construction
- Recommendations**

**Whitewell Lodge
Whitewell
Wrexham
SY13 3AL**



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**Tree Hazard Inspections • BS5837 Trees on Development Reports Planning Advice • Tree
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Preamble & Brief

This report has been commissioned by Mr. D. Whitewell with the purpose of providing an assessment of trees growing along the proposed northern access and car parking to Whitewell Lodge and has been prepared in accordance with the guidance specified in BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*.

The submission is made to discharge Condition 4 of Planning Permission P2019/0952 which was granted Planning Permission on 27/07/2020.

Condition 4 is repeated below;

No part of the development shall commence until a detailed Arboricultural Method statement has been submitted to and approved in writing by the Local Planning Authority. No development or other operations shall take place except in strict accordance with the Method Statement as is approved. The method statement shall include the following;

- a) *A specification for tree protection fencing and ground protection measures that comply with British Standard 5837:2012*
- b) *A Tree Protection Plan showing the location of the trees to be removed and retained with their crown spreads, Root Protection Areas, Construction Exclusion Zones and location of protective fencing and ground protection measures accurately plotted.*
- c) *A full specification for any access, driveway, path underground services or wall foundations within retained Tree Protection areas or Construction Exclusion Zones, including any related sections and method for avoiding damage to retained trees.*
- d) *Details of general arboricultural matters including proposed practices with regards to cement mixing, material storage and fires*
- e) *Details of the frequency of supervisory visits and procedures for notifying the findings of such visits to the Local planning Authority*
- f) *Method for protecting the retained trees during the demolition works*
- g) *Details of all proposed tree works, including felling and pruning*

In relation to the above Condition requirements this report consists primarily of;

1. A **Tree Survey** which records all the relevant information required when assessing trees for retention, including any impacts the development may have. The Tree Survey also provides details of those trees adjacent to the site which may be affected or within influencing distance. However, to a certain degree this information may be dependent on access. This section should be read in conjunction with the **Tree Location Plan**, (Appendix 7), which identifies the location of all the above mentioned trees and their colour coded category.
2. An **Arboricultural Impact Assessment** which provides an insight into what impact the proposed development may have on the trees within and, immediately adjacent



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to the site. This part of the document also provides information on any necessary mitigation measures concerning the above and below ground constraints posed by the trees.

3. An **Arboricultural Method Statement** providing details on how the trees proposed for retention will be protected and managed for the duration of the development. This part of the document also provides a **Tree Protection Plan**, (Appendix 9), which clearly identifies the location of the required protective fencing and its construction together with any special construction techniques required.

The above mentioned documentation combines to provide the Local Planning Authority with the information required to assess the trees in the context of their current setting and the requirements of the Condition.

In addition to the above, further information with regard to the requirements of points a) – g) are provided below;

- a) Refer to Appendices 3, 4, 5, 6, 9, 10 & 11
- b) Refer to Appendix 6 Protective Surfacing Location, Appendix 8 Tree Constraints Plan & Appendix 9 Tree Protection Plan
- c) Refer to Appendix 10 Cellweb Construction & 11 Generic Cellweb Type Construction Techniques
- d) Refer to sect. 3.5 “Specific Tree Protection Measures”
- e) Refer to sect. 3.1 “Arboricultural Supervision Requirements”
- f) Tree protection to be in accordance with Appendix 9 Tree Protection Plan
- g) Refer to sect. 2.2.3 Tree Works Proposed - Summary

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Section 1: Tree Survey

1.1 Tree Survey

All those trees with a diameter of 75mm or greater growing on the site, and those which are growing within influencing distance of the proposed development, have been recorded using the guidance specified in Annexe C of BS5837:2012.

Diameters and sizes have been measured using a purpose designed diameter tape, surveyor's tapes and, where appropriate, laser measure. Where accurate measurements have not been possible, an approximate size has been given.

A total of 12 no. individually growing trees have been measured, categorised and recorded for the purpose of this report (refer to Appendix 1).

Crown spread and height has been provided to the nearest full metre with diameters measured accurately in millimetres.

The schedule containing information for those trees on and around the site has been provided in Appendix 1 with tree locations plotted on the enclosed Tree Location Plan (TLP) provided in Appendix 7.

The Tree Survey Data Sheets provided in Appendix 1 identifies the following information;

Tree No.	Species	Age Class	Height	Crown Spread	D.B.H	RPA (M)	First Branch	Physiological Condition	Structural Condition	Est. Remaining Contribution	Comments	Category	Recommendations
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Tree No. The unique number given for each tree and used to specify trees throughout this document

Species Common name given where suitable

Age Class Imm – Immature, sm - semi-mature, em – early mature, m – mature, om – over mature

Height measured to the nearest metre

Crown Spread measure at the four cardinal points

D.B.H. Diameter at breast height measured in millimetres

RPA Root Protection Area given as a radius for the protection of roots around the retained tree and shown on the associated Tree Protection plan (TPP)

First Branch the height of the first branch from ground level (GL)

Physiological condition a brief, general description of the tree's health/vigour described as Poor, Reasonable or Good. Elaborated on, where necessary, in the "Comments" box.

Structural condition a brief, general description of the tree's structural condition described as Poor, Reasonable or Good. Elaborated on, where necessary, in the "Comments" box.

Est. Remaining Contribution as per Appendix 1; <10yrs, 10-20yrs, 20-40years, >40yrs

Comments A brief summary of any issues or benefits identified

Category Refer to sect. 1.1.1 below

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Recommendations May include works essential for development or works necessary to retain or improve a tree's health/vigour or safe useful life expectancy

1.2 Tree Categorisations explained

Trees have been categorised as per the recommendations described in Table 1 of BS5837:2012. A copy of Table 1 has been included in this report as Appendix 2.

Categories identified in Table 1 of BS5837:2012 can be summarised as follows:

A Category Trees in good physiological and structural condition which provide a substantial contribution in terms of landscape, cultural or arboricultural value and with an estimated life expectancy which exceeds 40 years.

B Category Trees of a moderate quality and value and which have an estimated life expectancy which exceeds 20 years.

C Category Trees of a moderately low quality and/or value with a life expectancy which exceeds 10 years.

U Category Trees of a size which can be easily mitigated or trees which are in poor physiological and/or structural condition and/or with a life expectancy of 10 years or less.

In addition the above, BS5837:2012 provides sub-categories to give each tree a context for its value as follows:

1. Mainly arboricultural
2. Mainly landscape
3. Mainly cultural (including conservation benefits)

Within, and within influencing distance of, the proposed development there are a total of 35 no. individually recorded trees and 10 no. tree groups which have been categorised as per the table below:

Category A	Category B	Category C	Category U
4	2	3	3

1.3 Site Visit Parameters and Limitations

The site was visited on 25th September 2020 with the weather conditions being clear with occasional gusts of wind and light showers with little cloud.

All tree inspections were made from ground level only and cannot be considered as a tree safety survey. However, where obvious defects have been seen they have been noted.

No soil samples were taken.

Trees seen to be growing within influencing distance of the development have, in accordance with BS5837:2012, been included in the survey. Comments within the associated Tree Survey Data Sheets identify such trees. Where accurate measurements of these trees has not been possible then these have been estimated and given the abbreviation est. against the relevant measurement figure.

1.4 Constraints Posed by Existing Trees

Development can cause both long and short-term impacts to tree health and stability particularly through inadequate protection of Root Protection Areas (RPA's). However, below ground tree constraints may alter if it can be seen that root growth may have been inhibited, for example, due to topography or drainage.

4 No. Category A trees were recorded with none proposed for removal.

2 No. Category B trees were recorded with none proposed for removal.

3 No. Category C trees were recorded with none proposed for removal.

3 No. Category U trees were recorded with none proposed for removal.

In some instances the RPA may be off-set but this should not be the default approach and should only be considered where justified and where the tree can be retained in a viable way. The existing access is well established and passes through root protection areas of those trees growing adjacent to it. Off-setting the RPA would have little, if any, value on this occasion.

The composition of the existing access is difficult to ascertain with conviction. However, in order to preserve the RPA's of the neighbouring trees a cellular confinement system has been proposed as per Appendices 6, 10 & 11. The access is to remain of the same width, circa. 3m, as to how it appeared prior to the Planning Application.

The proposed development is for the internal conversion of the existing Whitewell Lodge with no external works planned that would affect the trees. The proposal is not considered to be of detriment to the existing trees and the only interaction to be considered is the use of the existing access and parking. Delivery of materials would be more convenient to the development via the front, or western access, and parking.

It is not envisaged that further crown lifting of this section of access is required beyond that which has already been undertaken. However, it is recommended that the trees which line the main driveway from Whitewell Road be crown lifted to approx. 6m, regardless of development. Such works would result in the minor pruning of tertiary branches only.

Building materials are limited to those required for an internal renovation and therefore their storage is to be out of the elements, inside the existing building.

It is not envisaged that cement or concrete mixing will be required to any great degree. However such operations should be carried out well away from RPA' and in accordance with section 3.5.

The associated Tree Protection Plan (TPP – Appendix 9) provides an illustrative guide to the above and below ground constraints in terms of Crown Spread and Root Protection Area. The supporting TPP identifies the colour coded retention category of each tree as per para.

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1.2 above, with the Root Protection Area colour coded to the category to the appropriate retention category.

1.5 Associated Information

A plan showing the existing layout was provided at the time of the site visit by the client. No topographic survey was available. However, due to the nature of the proposal it is not thought that one would be required.

Greenspaces take no responsibility if the information on the received plans is inaccurate. However, cursory checks on site seem to correspond with what was provided.

Section 2: Arboricultural Impact Assessment (AIE)

2.1 Development Proposal

The proposal is for internal alterations to the existing dwelling with no exterior works proposed other than the formal use of the north access and small car parking area for circa. 2 cars.

Delivery of materials would be to the south of the property using the existing access and parking. With the above in mind, the only arboricultural considerations are those relating to the north access as identified in the attached plans (Appendices 6 – 9)

2.2 Predicted Impact of the Proposal

The only impacts of the proposal are the introduction of the access which, if carried out as specified and in accordance with the recommendations of BS5837:2012 are not considered to have a detrimental impact on the existing trees.

No trees are proposed for removal and no pruning works are needed to implement the consent. However, it is recommended that trees growing along the main access from Whitewell Road are crown lifted as mentioned previously, regardless of development.

2.2.1 Trees proposed for removal

No trees have been proposed for removal.

2.2.2 Trees to be retained with disturbance of RPAs

No Root Protection Areas have been offset. However, the existing access track passes through the RPA's of all the trees except trees 571, 572, 575, 579 & 581.

2.2.3. Tree works proposed – summary

Tree No.	Category	Proposed works
569 & 577	B	Remove stubs from previous pruning operations
570	C	Remove stubs from previous pruning operations

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571	A	Remove stubs from previous pruning operations
572	U	Consider removal for benefit of other trees but not a development requirement

All tree works should be undertaken by trained and competent arborists and should conform to the guidance given in the British Standard for Tree Work BS3998:2010

2.3 Mitigation Measures

The measures below are a brief description of how any foreseeable negative impacts can be alleviated or mitigated.

2.3.1 Mitigation planting

The site sits within a plot with a reasonable amount of associated open space and woodland which the owners maintain with additional planning regardless of development. With this in mind, no further planting is proposed in regard to the development.

2.3.2 Protection of retained trees

Regardless of a tree's statutory protective status, if it is identified and agreed for retention there is a requirement for its physical protection as prescribed in BS5837:2012. The Arboricultural Method Statement provided in section 3 of this report gives detailed recommendations of how this protection will be achieved. Provided these recommendations are adhered to then the development is not considered to have a detrimental effect on those trees identified for retention.

2.3.3 Infrastructure and utility works

All infrastructure and utility works are to be carried out in accordance with the guidance provided in the documents *National Joint Utilities Guides 4 & 10* and, where prescribed by the Local Planning Authority works will be carried out under the supervision of a qualified and experienced arboriculturalist. However, the proposal is for internal works only utilising existing infrastructure and utilities.

2.3.4 Working corridors

Due to the distance between trees and the development it is the arboriculturalist's opinion that the proposal does not require any special measures for working corridors. However, if a need for the encroachment of an RPA arises then following consultation with the Local planning Authority a form of ground protection will be required commensurate with the working corridors traffic. This could include simple tracker plates, raised walkways or more technical traffic carrying solutions.

Section 3: Arboricultural Method Statement (AMS)

This section should be read in conjunction with the associated Tree Protection Plan (TPP) both of which should be kept on site for reference during all stages of the development.

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3.1 Arboricultural Supervision Requirements

Pre-commencement meetings should identify the need, or otherwise, for arboricultural supervision and at which stages arboricultural input may be required. Such supervision is not thought to be required on this proposal.

3.2 Timings and sequences of operations

Successful tree retention can only be achieved through effective tree protection and by following a logical sequence of events.

The first of this sequence is to carry out any necessary tree works prior to the site becoming active, followed by the installation of the protective fencing and any further ground protection operations which may have been identified.

Tree works should be planned to take account of relevant legislation including The Town & County Planning Act, archaeological, wildlife and habitat legislation (in particular bird nesting season and bat habitats).

It is the developer's responsibility to ensure that no breaches of legislation occur.

3.3 Tree works and tree removal – Time Frame

The table below gives a time frame for specified tree works. Tree works should only be undertaken following agreement from the Local Planning Authority or on receipt of Full Planning Permission for the proposal. Failure to do so may result in a breach of Condition, a criminal offence being committed or necessitate costly and time consuming amendments to plans and consents.

Tree No.	Proposed works	At which stage of development
569, 570, 571, 572 & 577	Remove stubs from previous pruning operations	Pre or post development

3.4 Protective fencing discussion

Refer to drawings shown in Appendix 3 and as provided from BS5837:2012 for protective fence design and ground protection.

The protective fencing should be erected prior to any demolition or construction stages and will remain in place for the duration of the development in accordance with any Conditions imposed by the Local Planning Authority.

The fencing is intended as a precaution to prevent accidental damage to the rooting area of retained trees. However, no materials should be stored inside the protective area and no waste run off, for example from the cleaning of equipment, should be allowed to enter the Root Protection Areas.

It is recommended that signs are fixed to the protective fencing as shown in Appendix 4

3.5 Specific tree protection measures

- No fires shall be lit within RPA's, or under the canopy, of any retained tree on or adjacent to the site.
- No concrete, cement or similar will be mixed within the identified RPA's and no run off from cleaning machinery will be allowed to enter RPA's.

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- iii. No materials should be stored within RPA's.
- iv. Contamination or compaction of areas proposed for future landscaping works should be avoided or made good prior to any planting.
- v. Contractor parking will not be within RPA's.
- vi. Herbicides should not be used within RPA's.
- vii. Excavations and ground vegetation stripping, excluding the removal of trees and shrubs, should not be undertaken until RPA's have been established.
- viii. Retained trees will not be used for the anchorage of equipment or signage.
- ix. Protective fencing should not be moved other than in accordance with this document.

3.6 Permanent surfacing within root protection areas

In certain circumstances departure from the British Standard (BS5837:2012) can be considered. Such departure includes the possibility to "off-set" RPA's and/or introduce "no-dig" construction techniques (BS5837:2012 sect. 7, sub. Sect. 7.4).

The current proposal requires the use of the pre-existing access which dissects the root protection areas of 7 no. trees for the vehicle access, (trees 569, 570, 573, 574, 576, 577 & 580).

Although the access has been used on a daily basis historically, it is proposed that a cellular confinement system is introduced to take the passage of the additional 2 cars proposed.

In order to install the proposed no-dig solution successfully the manufactures guidance of the selected surfacing has to be accurately followed. An example of a cellular confinement system and its construction techniques are provided in Appendices 10 & 11. However, although all follow a similar pattern, the manufacturer's installation instruction specific to the product chosen must be adhered to.

Points to note include;

- i. To avoid damage to tree roots only the existing chipping surface layer is to be removed. The top soil is to remain in situ.
- ii. The existing surfacing should only be removed when ready to be covered in the new cellular confinement system.
- iii. Edgings are to be non-invasive ground contact structures such as pegged timber boards, sleepers or proprietary products.
- iv. Protective fencing should be reset to the edge of the proposed surfacing and should not be moved further than needed.
- v. Once the RPA beneath the existing surfacing has been exposed it should be treated as sacrosanct and excavation, skimming or scraping should be avoided.
- vi. Exposed roots are to be immediately covered to prevent desiccation. The covering must be removed before the new surfacing is installed (which is to take place as soon as possible after the roots have been exposed).
- vii. If it is intended to use the new access for construction traffic then the selected depth of Geoweb should reflect this. Alternately a temporary sacrificial surface should be overlaid.



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- viii. The finished level should take into account any adjacent structures and, in particular, any mergers into other levels and links into existing highways.

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Appendix 1 – Tree Survey Data Sheets

Tree No.	Species	*Age Class	Height (M)	Crown Spread (M)				D.B.H (MM)	RPA (M²)	Radius of circle (M)	First Branch (M)	Physiological Condition	Structural Condition	Est. Remaining Contribution	Comments	Category*	Recommendations	
				N	E	S	W											
577	Oak	M	18	4	3	8	4	600	163	7.2	1.5	Fair	Good	20>	Stubs left at 2m north side as a result of crown lifting over the existing access historically. Possible root damage or pruning on north west side adjacent to existing access. Epicormic growth throughout crown and stem. Minor dead wood.	B2	Remove stubs and crown lift over garden area to facilitate grass cutting if required.	
579	Laburnum	M	4	0	0	3	3	100 75 90	10.7	1.8	<1	Poor	Poor	N/A	In decline with very little live crown remaining (approx. 20%). Suppressed by neighbouring trees	U	retain for ecological value	
580	Beech	M	18	6	9	9	8	800	290	9.6	1.5	Good	Good	40>	Possible <i>Nectria coccinea</i> in lower canopy scaffold limbs and some indistinguishable damage to limbs on north east side (flat tops of several branches and limbs?) usual included unions and acute/tension forks associated with species	A2	No works required but suggest aerial inspection of flat topped limbs to ascertain any risk of failure	
*Category A – High Quality Life of 40yrs+								B Moderate Quality 20yrs+				C Low Quality 10yrs+			Sub-Category 1 Arboricultural		2 Landscape	3 Cultural
*Age Class – Y Young								IMM Immature				SM Semi-mature			M Mature		OM Over mature	

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Tree No.	Species	*Age Class	Height (M)	Crown Spread (M)				D.B.H (MM)	RPA (M ²)	Radius of circle (M)	First Branch (M)	Physiological Condition	Structural Condition	Remaining Est. Contribution	Comments	Category*	Recommendations
				N	E	S	W										
581	Hawthorn	M	6	0	2	3	0	120 x 3 100 x 2	28.6	3	1	Poor	Poor	N/A	Majority of upper canopy dead due to suppression from neighbouring trees	U	retain for ecological value
569	Oak	M	17	11	10	10	11	475	102	5.7	2	Fair	Good	20>	Crown lifted over access with several stubs remaining. Limb lost historically on south side @ 3m from ground level. Epicormic throughout canopy and stem. Leaf cover appears sparse. Raised soil levels south/south-west side. Minor dead wood throughout. Evidence of old fencing wire on south west side under bark causing ring bulge.	B2	Remove stubs. Possibly try reducing soil level back to historic level although doubtful it will extend tree life.
570	Oak	M	15	2	3	11	8	500	113	6	7	Fair	Fair	10>	Historically trifurcated as of 0.5m from ground level. At present only one stem remaining on south side. Stubs and snapped out stem stub present	C	Remove stubs
571	Birch	M	19	7	4	3	4	425	81	5.1	3	Good	Good	40>	Stub from previous pruning @ 3m west side. Minor epicormic to stem	A	Remove stub

*Category A – High Quality Life of 40yrs+

B Moderate Quality 20yrs+

C Low Quality 10yrs+

Sub-Category 1 Arboricultural

2 Landscape

3 Cultural

*Age Class – Y Young

Imm Immature

SM Semi-mature

M Mature

OM Over mature

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				N	E	S	W										
572	Sycamore	Imm	9	2	0	0	4	200	18	2.4	3	Poor	Poor	N/A	Suppressed by neighbouring trees. Squirrel damage throughout crown. Whole tree biased west from ground level. Significant damage to stem at 1.5m from ground level on north west side.	U	No works required to facilitate development but consider removal for benefit of other trees.
573	Poplar	SM	25	7	7	8	8	800	290	9.6	5	Good	Good	40>	Black poplar hybrid (common ornamental variety). Minor dead wood.	A	No works required
574	Birch	M	22	6	5	3	1	625	177	7.5	6	Good	Good	10>	Stub at 1.5m from ground level west side. Tree leans +5° - 10° south from ground level to 6m before righting.	C	No works required
575	Oak	Imm	17	0	6	3	0	275	34	3.3	3.5	Good	Good	10>	Suppressed by neighbouring trees. Crown lost historically with main limb taking over dominance evident by growth pattern at 6m from ground level.	C	No works required
576	Oak	SM	19	7	8	5	3	550	137	6.6	4	Fair	Fair	40>	Epicormic growth throughout. Minor dead wood. Stubs at 3m from ground level south side. Suspected internal vertical crack evidenced by rib on west side @ 0.25m – 2.5m from ground level. Historic bacterial bleed to north of suspected crack	A	No works required.

*Category A – High Quality Life of 40yrs+

B Moderate Quality 20yrs+

C Low Quality 10yrs+

Sub-Category 1 Arboricultural

2 Landscape

3 Cultural

*Age Class – Y Young

Imm Immature

SM Semi-mature

M Mature

OM Over mature

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Appendix 2 – BS5837:2012 Cascade Chart for tree categorisation

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</i>			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

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BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems

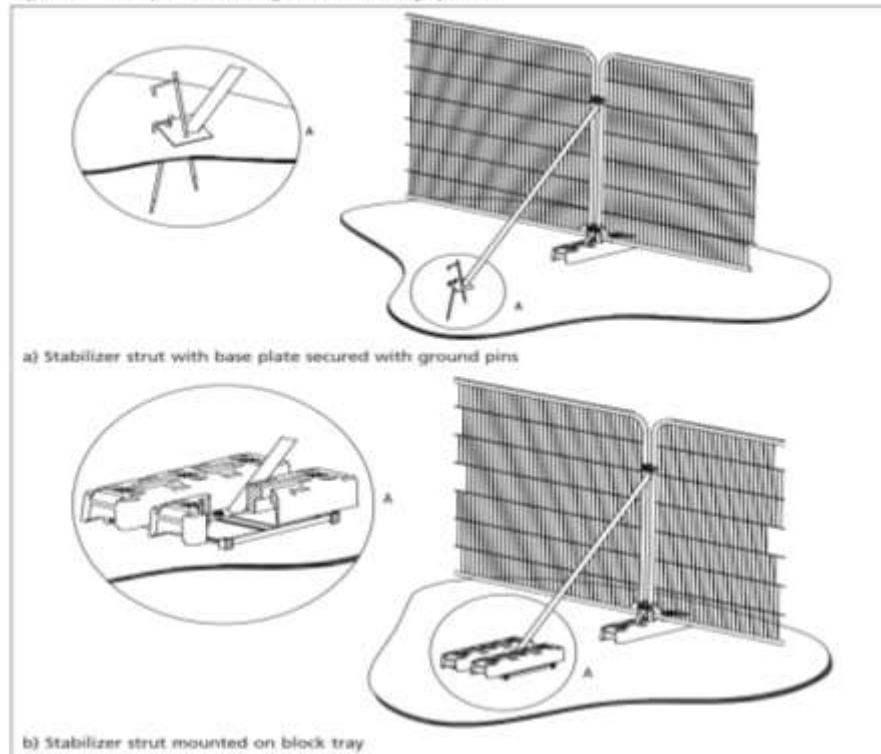
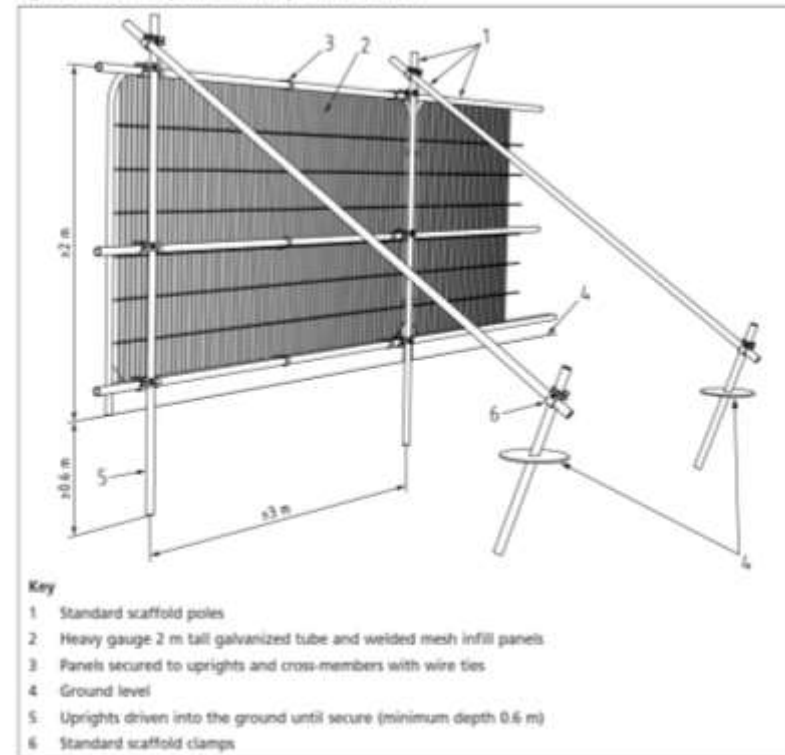


Figure 2 Default specification for protective barrier



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Appendix 5 – Heras Steadfast System Construction Notes

heras® 151 and 151steadfast system

round top panel with anti-climb mesh
high visibility orange blocks
steadfast strut
anti-tamper coupler
fully tested and certificated
health and safety compliant (HSG 151)

151 system

The key components of the Heras 151 system are as listed:

Round Top Panel with Anti-Climb Mesh

- The strongest panel in the market, with a maximum length of 3.0m, allowing the top corner width, after the round top, to be a maximum of 1.0m.

High Visibility Orange Block

- Permanently coloured, ultra-durable, UV resistant, long-lasting and built with high-density concrete.
- Multiple heights are available to meet your needs.
- Range of shapes and sizes to meet your needs, with top and base.

Heraside® Anti-Tamper Coupler

- Providing additional security, these couplers can only be removed with the use of the specialist tool.

151steadfast system

The Heras 151steadfast system incorporates all the benefits of the 151 system, with the addition of the patented...

Heraside® Steadfast Strut

- The unique design of this strut, that incorporates the patented...
- The strut is made with high-density, built-in, long-lasting and built-in...
- A additional safety feature incorporated into the design, allowing for...

Optional Extras

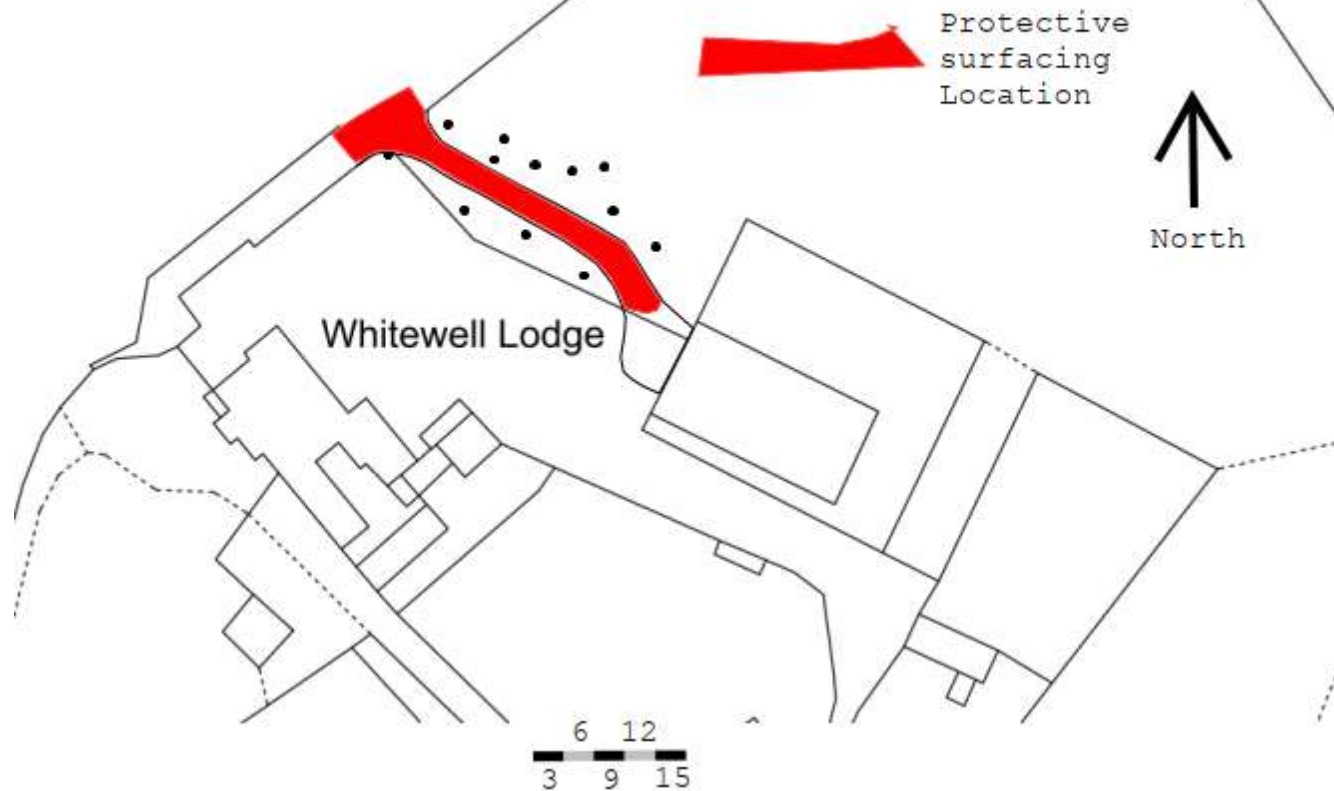
- Heraside® Steadfast Struts with reflective coating can be fitted to...
- Built-in support brackets allow for improved performance on uneven ground conditions and irregularly shaped blocks.

Our latest solution for securing site perimeters and protecting the public has been phenomenally successful since its launch, and offers the ultimate market leading temporary fencing system.

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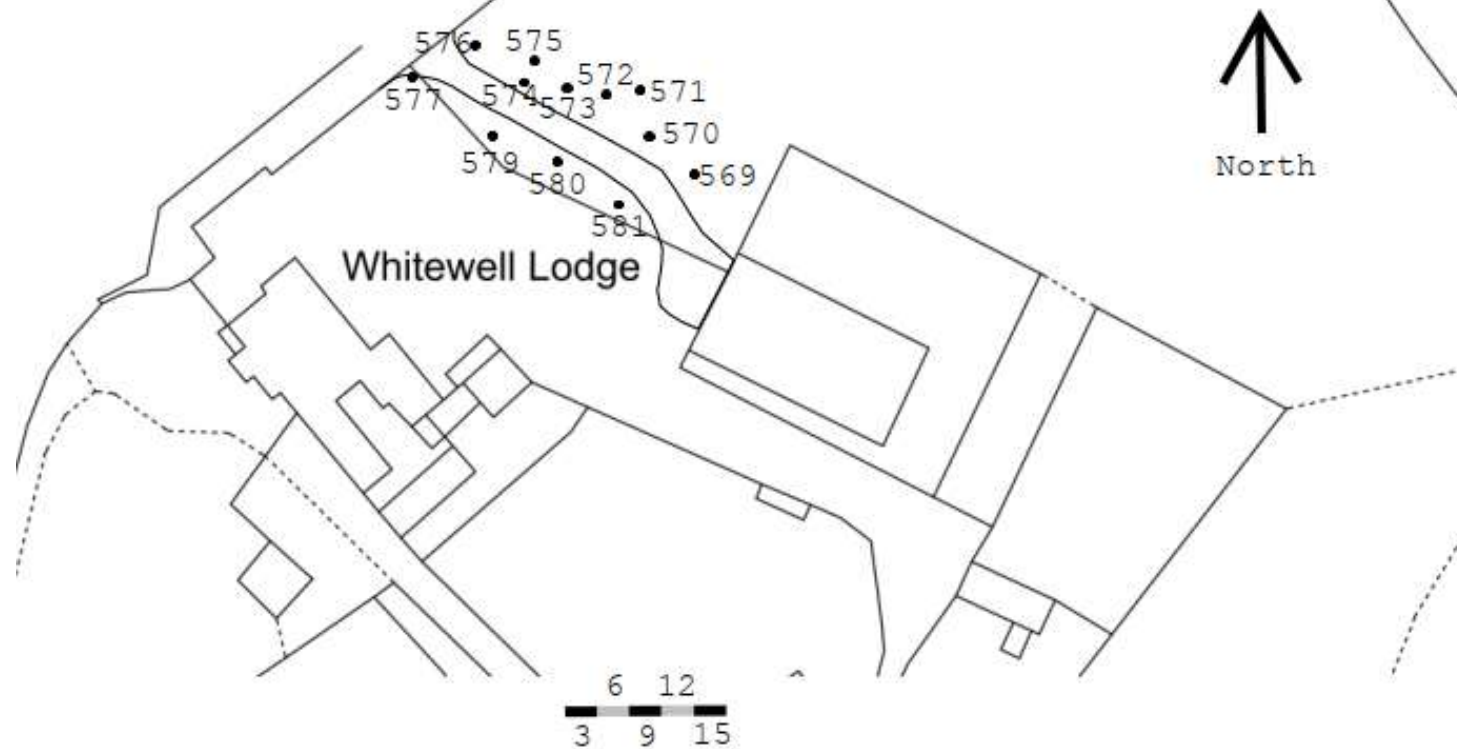
Appendix 6 - Protective Surfacing Location



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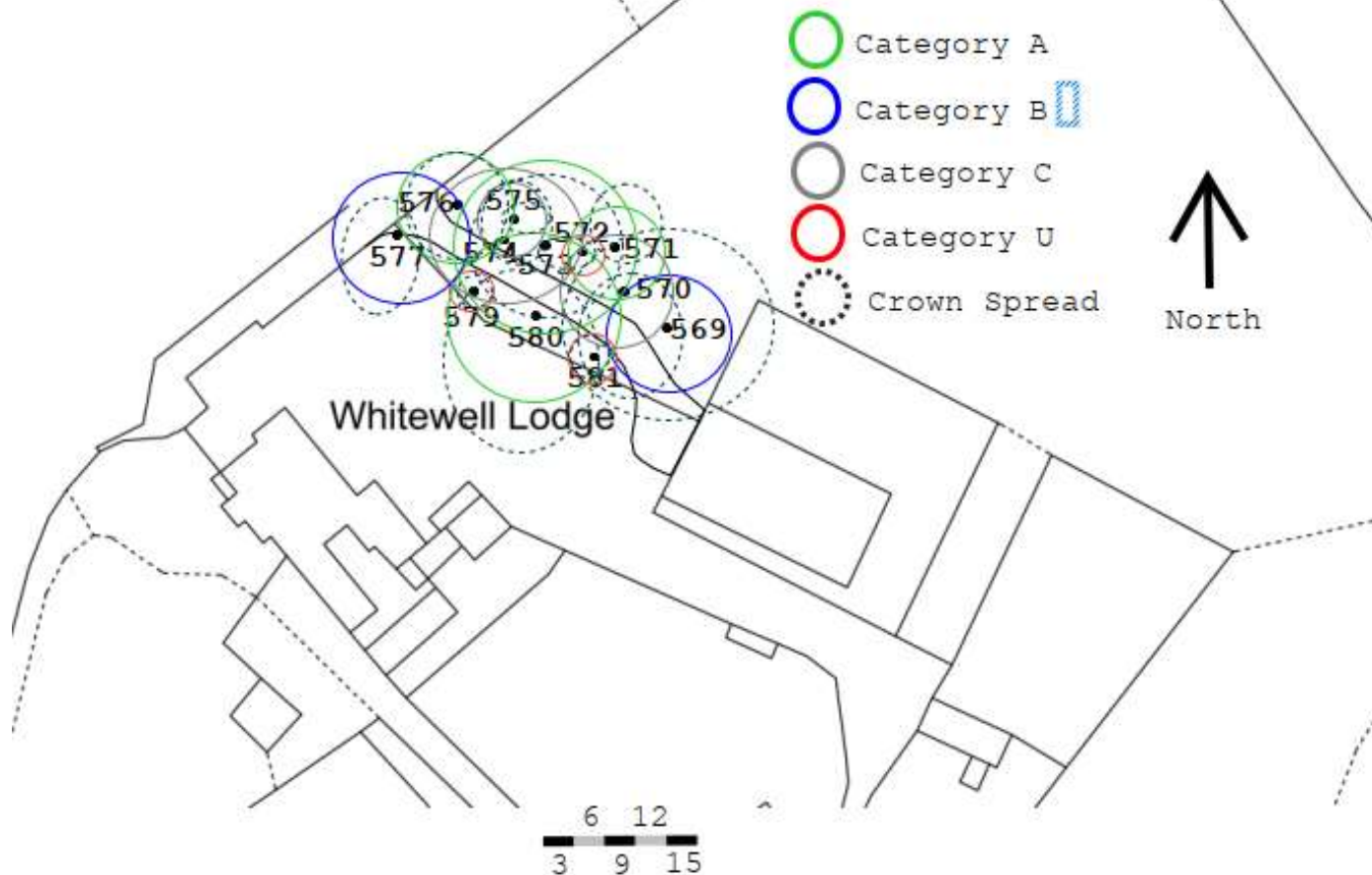
Appendix 7 - Tree Location Plan



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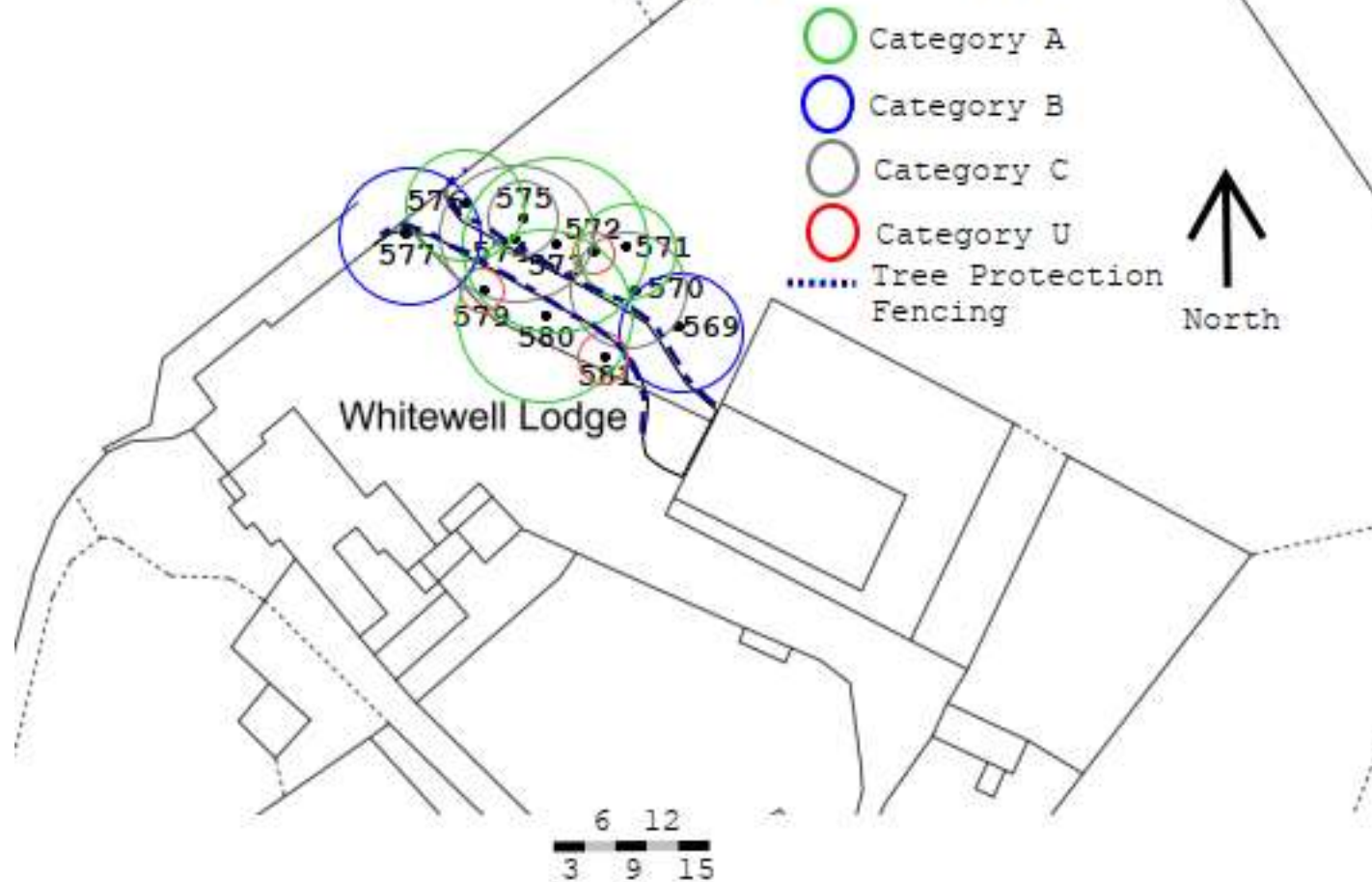
Appendix 8 - Tree Constraints Plan



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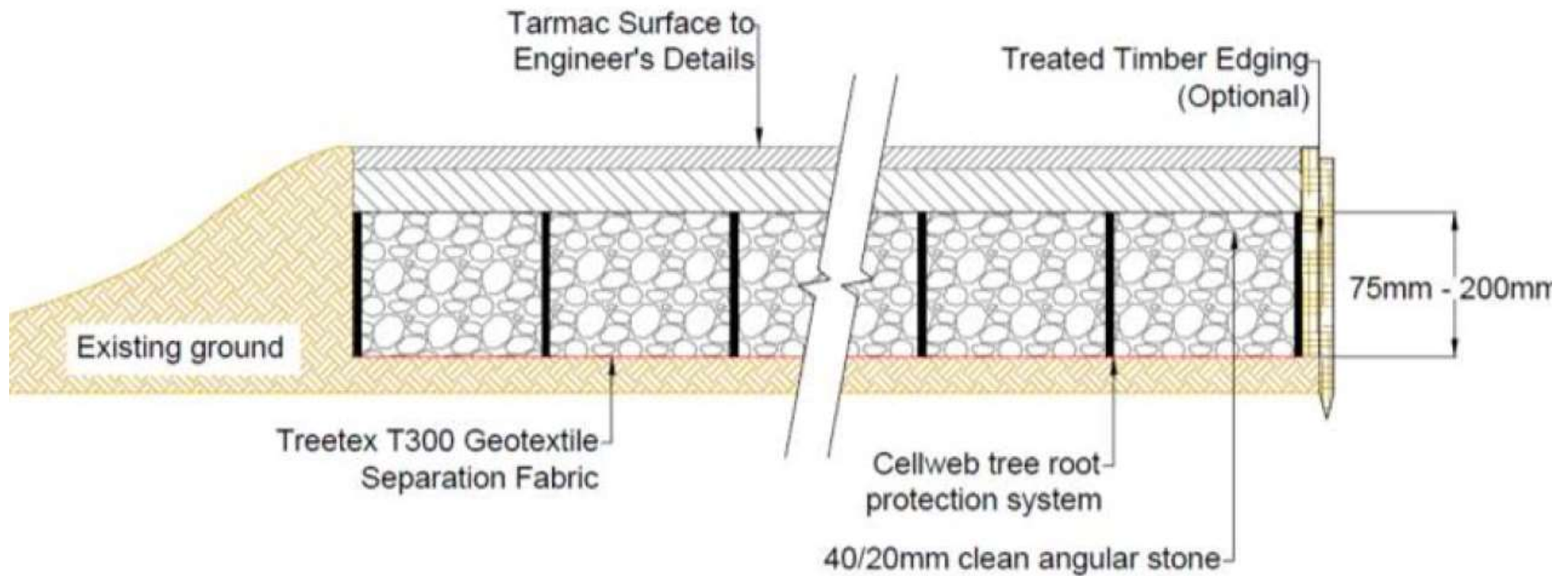
Appendix 9 - Tree Protection Plan



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Appendix 10 - Cellweb Construction



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Appendix 11 - Generic Cellweb Type Construction Techniques

Installing Abweb TRP

Before works commence

1. Ensure approval for use of Abweb TRP in this application from both local planning department and Tree Protection Officer.
2. Determine the limits of construction and proximity to the tree of the installation.

Site preparation

3. Remove all debris and areas of hard surfacing. Reduce site levels to permitted reduced dig to meet final levels. Soil compaction and tree root damage should be avoided.
4. Ensure the site is reasonably level and free from undulations. Level using sharp sand if required. Rolling and compaction is not advised.

Installation

5. Install approved edge retention system around perimeter of the installation area.
6. Lay Terrax geotextile across area of installation. Adjacent sheets should be overlapped by a minimum of 150mm.
7. Open out Abweb TRP pinning in place between the installed edging. It may be necessary to cut the Abweb TRP to ensure good fit. This can be done using a sharp knife.
8. Pin the perimeter of the Abweb TRP panels. The pins primary function is to ensure the cell apertures remain open during the filling process. Avoid damaging the tree root structure during the pinning process.
9. Fill the Abweb TRP working from the outer perimeter of the installation towards the tree. The filled area can be used as a working platform for the filling operation. The laid surface should not be rolled although light compaction can be achieved using a whacker plate.
10. Install the finishing surface as specified.

Installation of temporary access roads

Abweb TRP can be installed to form a temporary access or haul road that can be partially or completely removed once construction works have been completed.

11. Follow steps 1 through to 9 above
12. Install a second layer of Terrax geotextile above the Abweb TRP. The specification of this is dependent upon the specific site/traffic conditions and the grade can be advised by AGS Technical Department.
13. Place 100mm of approved aggregate over the geotextile. Suitable aggregate is again site specific and advice should be sought.

Decommissioning

14. Once the road is no longer required remove the top layer of aggregate and replace with the final finishing layer. Alternatively the entire road construction can be removed taking care not to damage the tree root structure during the removal process.
15. Abweb TRP can be recycled after use. Seek specific local advice on recycling.



Access track prior to installation



Inserting temporary pins to hold cell panel open



Preparing for infilling



Infilling using filled area as a working platform

Appendix 12 Site Images



The pre-existing access track with an overlay of new gravel proposed for access for an additional 2 vehicles

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Tree 577 displaying possible, historic root damage associated with vehicle access



Tree 577 – pruned over access historically with crown biased south west over garden space

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From right to left; trees 575 (Birch), 575 (immature oak) and 576 (oak)



Left of track; 575 (birch) right of track 580 beech



Tree 575 – immature oak

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Tree 575 – oak with limb taking dominance and forming new leader



Tree 581 – hawthorn suppressed by neighbours with significant drow die back



Trees 569 & 570 - 569 in the background with 570 at the fore.

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End of Document

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