



Elite Ecology

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Land between Cwmavon and Dan y Bont



BS5837:2012 Tree Survey and Arboricultural Impact Assessment

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BS5837:2012 Tree Survey and Arboricultural Impact Assessment

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0. Executive Summary

- 0.1** This report has been prepared at the request of Mr. Jim James. Elite Ecology were commissioned to undertake a BS 5837 Tree Survey and Arboriculture Impact Assessment at Land between Cwmavon and Dan Y Bont, Maes y Bettws, Pontrhdyfen, SA12 9SD (Central OS Grid Reference: SS 79305 93875). This survey effort involved both a desktop study and field survey being undertaken.
- 0.2** The survey records all trees within the site and any that may be impacted by the development proposals within or outside of the site boundary. The survey records a number of parameters including, species, crown/ canopy spread and root protection areas (RPA).
- 0.3** Throughout this report “RPA” is used to refer to “root protection area”. The RPA of any given tree is the area of ground around that tree which should not be disturbed by excavation, compaction, changes in level and/or any other construction/ demolition processes. The extent of the RPA is calculated in accordance with the BS5837 (2012) guidelines and is an important part of the methodologies described in this report.
- 0.4** In total the survey recorded one group of trees. These were predominantly native broadleaf specimens. The age class was **semi-mature** and the general overall condition was thought to be **good**.
- 0.5** This report details the arboricultural impacts and offers a range of protection measures that should be put in place prior to any works being started as well as construction methodologies that should be adopted. These measures will prevent accidental damage and other adverse effects on retained trees.

BS5837:2012 Tree Survey and Arboricultural Impact Assessment

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1. Introduction

1.1 Report rationale

This report has been prepared at the request of Mr. Jim James. Elite Ecology were commissioned to undertake a BS 5837 Tree Survey and Arboriculture Impact Assessment at Land between Cwmavon and Dan Y Bont, Maes y Bettws, Pontrhdyfen, SA12 9SD (Central OS Grid Reference: SS 79305 93875). This survey effort involved both a desktop study and field survey being undertaken.

Elite Ecology is a multi-disciplinary ecological and arboricultural consultancy practice which operates nationwide for its clients on a multitude of ecological and arboricultural projects since 2015. The author of this document Mr. David Whitehead is a time served climbing arborist and arboriculturist with twenty years of experience within the arboricultural industry, and is currently qualified to QCF level 4, HNC Arboriculture, and is further studying towards QCF level 5, FdSc Arboriculture. The overseer of this document, Mr. Richard Millington, is a Senior Ecologist, and is currently qualified to QCF level 6, BSc (Hons) in Ecology and Conservation Management.

1.2 Purpose

This report was carried out in accordance with BS5837 (2012) "*Trees in relation to design, demolition and construction*". The purpose of this report is to provide an analysis of the impact that the development proposals will incur on the trees and local amenity, and, the potential impacts of the trees on the proposals.

The report provides professional advice and recommendations in order to ease any conflicts and to help devise a suitable proposal that considers the tree population at the site.

1.3 Site description

The site consists of an area of hard standing measuring approximately 1184 m², located adjacent to the B4286. The site has a pre-existing brick/block construction stable building and a number of steel storage containers on site. The Western boundary of the site adjacent to the main road contains very little vegetation with no significant trees present. The Eastern boundary, adjacent to the river Afan, contains scattered trees of a semi-mature life stage, these are not trees of great stature or size but form an important part of the structure of the steep river bank. Many of the trees here are native species and of a good condition.

1.3.1 Root Barriers

No significant root barriers were observed, with the exception of the existing structure/ building/s foundation and the hard surface driveway at the site.

1.3.2 Soils

A search of the Landis.org.uk national soils database describes the soil in this area as freely draining acid loamy soils over rock. The soil here does not have significant potential to be of a shrinkable nature. The potential of root systems to exasperate seasonal climatic conditions via their water uptake, and the consequent effect that this can have on soil volume which can affect foundations and cause the movement of such, should be a primary consideration when designing foundations and expert advice regarding this should be sought from a qualified and competent structural engineer.

No in-depth soil analysis was undertaken, and no samples were taken or studied.

1.3.3 Topography and Levels

The site slopes steeply away along its eastern boundary down towards the river Afan. The trees here form an important part of the structure of the river bank providing stability and support for the overlying soil environment.

Figure 1: An aerial image showing the location and survey area at the Land between Cwmavon and Dan y Bont.



1.4 Current Proposals

The current proposals are to refurbish/convert the existing stable block to a day room. In addition to this, the plans are to locate a static caravan upon the site, with parking for a touring caravan.

2. Survey Methodology

The pre-development survey and assessment of the trees on site was undertaken in accordance with the British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (BS5837:2012).

These assessments were made from ground level only and is based on a visual inspection of the trees within the area. No invasive investigations, no tissue samples and no soil samples were gathered from this survey effort. This survey aimed to examine external features of the trees. Any growing conditions were noted down, with any obvious signs of physical and/or structure defects are recorded (this includes deadwood, die-back or any signs of decay).

In accordance with the aforementioned recommendations, the tree survey included all specimens that are within the site boundary with a diameter at breast height (DBH) of 75mm or above.

This DBH is then used to calculate the Root Protection Area (RPA) of the specimens on site. The RPA represents the minimum area around each tree that must be left undisturbed to ensure their survival. The majority of the tree roots are found in the top 600mm of soil, with most of the nutrient absorbing fine roots found within the top 100mm. The morphology of the roots is influenced by the presence of other site factors (such as roads, structures), soil type, topography and drainage. Where no RPA is identified in the table above, the canopy line should be treated as the RPA (this typically applies to small trees).

A topographical survey has been undertaken on the site prior to the field survey.

The field survey obtained numerous factors about the trees. The equipment used to gain measurements were a diameter tape, a laser measure and a clinometer. The information collected on the trees is as follows:

- Tree Number/Group Reference
- Species
- Height
- Branch Spread
- Height of First Significant Branch
- Age Class
- Physiological and Structural Condition
- Estimated Remaining Contribution (Years)
- Management Recommendations
- Notes

2.1 Tree Categorisation

Trees are graded in accordance with the Cascade Chart for Tree Quality Assessment. The purpose of the categorisation is to identify the value of the existing trees, allowing for informed decisions to be made in order to comply with BS5837:2012. These categories are **A**, **B**, **C** and **U**. Trees categorised as **U** have sound reasons for removal. Trees that fall within categories **A**, **B** and **C** should be considered for retention. The categories are as follows:

➤ **Category A:**

Trees that are of high quality, with an estimated remaining life span of at least forty 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.

Trees, groups or woodlands of particular visual importance as arboriculture and/or landscape features.

Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).

Trees in this category will be shown **light green** on the Tree Survey Plan.

➤ **Category B:**

Trees of moderate quality, with an estimated remaining life span of at least twenty years.

Trees that might be included within **Category A**, but have been downgraded due to impaired condition, such that they are unlikely for retention beyond forty years.

Trees that do not contain the special quality necessary to be classified as **Category A**.

Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals.

Trees occurring in collectives, but situated to contribute little to the local visual amenity of the area.

Trees with material consideration or other cultural value.

Trees in this category will be shown **mid-blue** on the Tree Survey Plan.

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➤ **Category C:**

Trees that are of low quality with an estimated life span of at least ten years, or young trees with a stem diameter below 150mm.

Trees of limited merit and impaired condition so as to not be classified at a higher category.

Trees present in groups or woodlands that are significantly greater collectively within the landscape.

Trees that offer minimal or temporary landscape benefits.

Trees with no material conservation or other cultural value.

Trees in this category will be shown **grey** on the Tree Survey Plan.

➤ **Category U:**

Trees that are in a condition where they cannot be realistically retained as living trees for longer than ten years.

Trees that have a serious, irremediable, structural defect that their loss would be due to collapse. This includes specimens that will not be viable following the removal of further **Category U** trees.

Trees that are dead or are showing signs of significant, immediate and irreversible decline.

Trees infected with pathogens or diseases that are harming the specimen itself, or is at risk of infecting nearby trees.

Trees that are of very low quality that are suppressing other nearby trees of higher landscape or ecological value.

Trees in this category will be shown **dark red** on the Tree Survey Plan.

2.2 Life Stages

All of the trees are separated into five life stages. These are as follows:

- **Young (Y)** – Newly planted or early established trees that are less than 150mm. These can easily be replaced.
- **Semi Mature (SM)** – Tree within the first quarter of its life span. Increasing in height and spread.
- **Early Mature (EM)** – Tree within the second quarter of its life span. Usually increasing in height and spread.
- **Mature (M)** – Tree within the third quarter of its life span. Usually at full height expectancy.
- **Over Mature (OM)** – Trees within the final quarter of its life span, or those that have exceeded their life expectancy. These can be in decline.

2.3 Physiological and Structural Condition

These conditions are categorised as either **good**, **fair**, **poor** or **dead**.

An assessment of a tree's physiological condition is defined as:

- **Good** – A fully functioning biological system showing expectant vitality for the species (i.e. normal bud growth, leaf size, crown density and wound closure).
- **Fair** – A fully functioning biological system showing below average vitality for the species (i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure).
- **Poor** – A limited biological system showing physiological decline, disease or significantly below average vitality (i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure).
- **Dead** – Those trees marked **Dead** have no visible foliage and brown cell structure under young bark.

An assessment of a tree's structural condition is defined as:

- **Good** – No significant structural defects.
- **Fair** – Structural defects that could be alleviated through remedial tree surgery or arboricultural management practices.
- **Poor** – Structural defects which cannot be alleviated through tree surgery or arboricultural management practices.
- **Dead** – Those trees marked **Dead** have no visible foliage and brown cell structure under young bark.

3. Statutory Protection and Guidance

3.1 Statutory Protection and National Planning Policy Framework (NPPF)

Any area of ground that has been continuously wooded since 1600AD is defined as an ancient woodland. Any tree of significant size, age, ecological value, amenity value, cultural and/or heritage value, is classed as a veteran tree. The NPPF assumes protection of all such trees and woodlands with exceptions made only in extreme circumstances where suitable mitigation strategies exist.

On site, no ancient woodland or veteran trees exist.

3.2 Tree Preservation Orders and Conservation Areas

An enquiry with the local authority planning department has revealed that the site contains no tree preservation orders or conservation areas.

Any advice given in this report is strictly advisory and does not overrule, bypass or otherwise in any way grant the client permission to carry out works on any of the trees included within the survey. Trees that are protected by TPO **require the express permission of the local district authority and/or their acting tree officer before any works may be carried out on them.**

Trees existing within a conservation area are protected by Section 211 of the Town and Country Planning Act 1990, in that anyone wishing to carry out work of any kind on such trees is required to submit a Section 211 application with the Local Authority, allowing six weeks' notice for any works. During such time, the Local Authority may assess such trees with a view to issuing further protection via TPO's if considered necessary.

3.3 Felling Licences

Tree felling in the United Kingdom is controlled by the Forestry Commission under the Forestry Act 1967. In a calendar quarter (three months), up to 5m³ can be felled without requiring a felling licence providing that no more than 2m³ are to be sold. If any felling proposed does not meet the aforementioned criteria, then a felling licence will be required. It is worth noting that some types of felling are exempt, such as the removal of deceased trees, or ones that are dying, dangerous or causing a nuisance.

3.4 Trees Outside of the Property

If works are recommended to be undertaken on trees that fall outside of the client/applicant's land, the full co-operation and liaison with these tree owners is necessary. Implications of not cooperating requires additional legal interpretation that are beyond the remit of this report. Under Common Law, branches from trees on adjacent properties that extend over boundaries can be pruned back to the boundary line without the permission of the owners.

3.5 Implementation of Tree Work

When appointing a tree contractor, only suitably qualified and experienced companies should be used. Always ensure that the contractor carries adequate insurance. The contractor should carry out all tree works to BS 3998:2010 *Recommendations for Tree Work*, as modified by more recent research findings.

3.6 Wildlife

All operations need to take into account the presence and/or potential presence of any wildlife at the site.

3.6.1 Bats

All trees with potential roosting features (PRF's) need to be assessed by a licenced bat surveyor. All bats and their roosts are protected by the legal framework within the United Kingdom. It is an offence to kill, injure or disturb a bat and to destroy or damage any place that is used for shelter by a bat.

3.6.2 Birds

All breeding birds are protected by law within the United Kingdom. Therefore, any tree removal should take place outside of the breeding bird season (March to August inclusive). If this cannot be achieved, a suitably qualified and experienced ecologist is required to inspect for any nests. If an active nest is located, an exclusion zone will then be implemented around this feature until any chicks have fledged the nest.

4. Results

The field survey at the site assessed the individual condition and value of a number of trees forming one group. The values in the table include the largest measurements and the mean category/classification of the trees.

Tree No.	Species	Tree Category (U/A/B/C)	Life Stage (Y/SM/EM/M/OM)	Condition (Good/Fair/Poor/Dead)	Number of Stems	Height (m)	Branch Spread (m)				Lowest Significant First Branch (m)	Stem at Breast Height (mm)	Minimum Remaining Contribution (years*)	Root Protection Area (m ²)	Root Protection Radius (m)	Observations
							N	E	S	W						
G1	Common Alder (<i>Alnus glutinosa</i>) Rowan Ash (<i>Sorbus subg. Sorbus</i>) English Oak (<i>Quercus robur</i>) Goat Willow (<i>Salix caprea</i>)	B	SM	Good	-	10-15	3	3	3	3	2	200 Avg	20+	-	2.4	Parameter RPA

	Common Ash (<i>Fraxinus excelsior</i>)																
TOTALS	Category	Life		Condition		NOTES:											
	Grading	Stages															
	A	0	Y	0	GOOD												1
	B	1	SM	1	FAIR												0
	C	0	EM	0	POOR												0
	U	0	M	0	DEAD												0
			OM	0													

5. Summary of Results

The field survey found the following information about the trees located on the survey site and within the sphere of influence:

5.1 Species Composition

In total, five tree species were identified on and around the survey site. The trees identified were all part of G1, and are as follows:

- Common Alder (*Alnus glutinosa*)
- Rowan Ash (*Sorbus subg. Sorbus*)
- English Oak (*Quercus robur*)
- Goat Willow (*Salix caprea*)
- Common Ash (*Fraxinus excelsior*)

5.2 Tree Survey Findings

All trees surveyed at the site were assessed, evaluated, and categorised in accordance with BS 5837 – *Trees in Relation to Design, Demolition and Construction* 2012. This information is summarised in the table below.

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LIFE STAGES		CONDITION		BS 5837 CATEGORY		
Subject Tree/ Group	Life Stage	Subject Tree/ Group	Condition	Subject Tree/ Group	Category	Sub cat
-	Young	G1	Good		A	
					A	1
					A	2
					A	3
G1.	Semi-mature	-	Fair	G1	B	
					B	1
					B	2
					B	3
-	Early-mature	-	Poor		C	
					C	1
					C	2
					C	3
-	Mature	-	Dead		U	
None	Over-mature					

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Figure 3: An extract of the grading criteria.

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	

6. Recommendations

6.1 General Condition and Observations

G1 exists as part of the river bank at the eastern boundary of the site. All trees observed were exhibiting a generally good condition, with no major defects or physiological disorders observed. None of the trees were of significant stature or merit, but do form an important structural part of the riverbank. The site itself and the current proposal is not in any conflict with these trees, and they are thought to be suitably protected from general activities on the site by the already existing eastern boundary fence. No significant excavation is planned on the site and the root systems that do intrude into the site area exist beneath a long-standing area of hard/compact stone surface and are not thought to be affected via surface activities.

6.2 Visual Tree Assessment (VTA)

A VTA was carried out from ground level. The assessment looked for cavities, fractures, breaks, cracks and signs of stress through tension and compression from the base and throughout the main body/ bole of the subject within the reasonably visible limits. The assessment also looked for signs of decay, fungal bodies and/or signs of insect infestation, along with the overall vitality of the subject and its organs. The assessment considered the location of the subject and its position, form, elemental exposure and proximity to neighbouring structures and public areas. The surrounding ground was also assessed for cracks and signs of movement or heave that may relate to root plate movement.

6.3 Structural Condition

Trees are multi-cellular living organisms and can be subject to rapid change over short periods of time. All observations were accurate at the time of survey. The general structural integrity of all trees is thought to be good at this time with no major cracks, fractures, breaks, cavities, or weaknesses being observed.

6.4 Physiological Condition

The detection of disease, infection, and infestation are subject to seasonal and climatic conditions. Some fungus, insect infestation and diseases are only apparent when they are in season and may be easily undetected at certain other times of the year.

At the time of survey, no major signs of disease, pathogen, fungal bodies, or insect infestation were observed on these trees.

7. Arboricultural Impact Assessment (AIA)

7.1 Introduction

In order to assess the impacts of the current proposal the following documents were used:

- Tree Constraints Drawing
- Tree Survey
- Architectural Drawing/s of Proposal/s

In the following sections, all potential impacts have been listed and described, with mitigation options to ease any conflicts provided in the recommendations section.

7.2 Development Proposals

The current proposals are to refurbish/convert the existing stable block to a day room. In addition to this, the plans are to locate a static caravan upon the site, with parking for a touring caravan.

7.3 Development Impacts

Potential impacts identified from the current proposals are:

- Potential damage to root systems, and soil compaction from any excavation activity close to the Eastern boundary.
- Minor spatial canopy conflicts.

7.3.1 Root Protection Areas

Root protection areas have been calculated in accordance with BS 5837 2012, and are shown as blue circles/lines in the tree constraints drawing.

Current proposals conflict potential conflict with all the RPA's of the subject trees at the site. However, current site plans are preliminary and may be subject to change.

7.3.2 Ground Level Changes around Trees

No major ground level changes are expected around any of the subject trees.

Designers should strive to not impact or effect ground levels around or within the RPA areas of retained trees. It is important that the existing ground level around any trees to be retained remains the same. This is because the critical root mass essential for the tree/s survival (the fine hair feeding roots) is usually found to exist within the top 100mm of topsoil. Should additional earth or material be pushed or laid over the top of the RPA then this critical root mass will no longer exist at its chosen ground level, soils become dehydrated, fungal and microorganism activity changes and this is known to have a detrimental effect on the feeding roots and consequently cause post development decline of the tree/s.

7.3.3 Access Facilitation Pruning

No pruning works are required to access the site or to facilitate the proposal.

7.3.4 Tree Removals

No tree removals are required.

7.3.5 Tree Retention

All trees can be retained.

7.3.6 Amenity and Area Impacts

As no major tree removals are expected, no amenity or area character impacts are expected.

7.3.7 Spatial Relationship of Trees and Post Development Pressure

Potential for spatial conflict is low with no extensive protrusions entering the proposal areas. Minor pruning works is to be expected in order to manage tree risk in the future.

7.3.8 Installation of Utilities

There are currently no plans to route any services through the RPA's of the subject trees/ groups, however, as guidance only, the routing of any services through the RPA of any of the retained trees should be in accordance with BS5837: 2012 clause 7.7.2 and NJUG guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.

7.4 Impact Summary

In summary, the overall potential for severe impact upon the subject trees is low. All potential impacts can be suitably managed and mitigated via a simple protection strategy and adherence to the provided recommendations.

8. Recommendations

8.1 Tree Work Recommendations

No tree works are recommended.

8.1.1 Remedial Tree Works

No remedial work to any of the trees is required at this time.

8.1.2 Tree Removal/Felling

No tree removal is recommended.

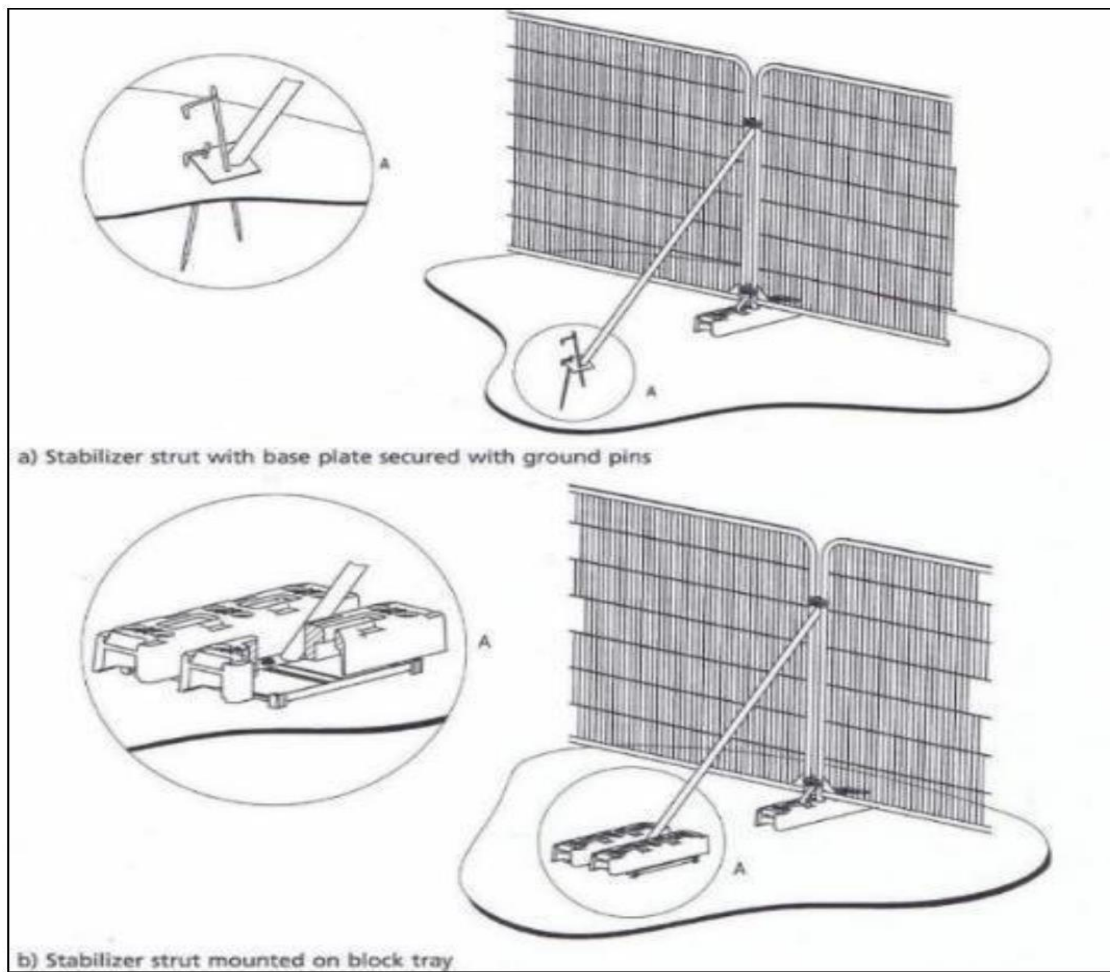
8.1.3 RPA Protection

The eastern boundary fence that is already in place serves sufficiently as protection from any on-site activities. No excavations are planned within the vicinity of the east boundary area and the surface area consists of long standing compact hard stone.

8.1.4 Protective Barriers and Signage

A suitably robust “Heras” type fencing is recommended for the protection of the main stems. The recommended location for fencing is shown as a red dashed line on the tree constraints drawing.

Figure 4: Showing example of appropriate fencing.



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Protected areas should be suitably signed so as to be clear and visible.

Figure 5: Showing an example of suitable signage.



8.3 Prohibited Activities within or close to the RPA

Regardless of circumstances, the following activities are prohibited:

- a) No fires should be lit on the site within 10m of the nearest section of tree canopy for any retained tree. This is prevalent for all trees located on site and adjacent to the proposal site.
- b) No equipment, signage, fencing shall be attached to or be supported by any retained tree on or adjacent to the application site.
- c) There will be no temporary access into the root protection areas (RPA's) unless written approval from the local planning authority (LPA) has been obtained.
- d) No mixing of cement, dispensing of fuels or chemicals is to occur within 10m of the tree stem for any retained tree. This is prevalent for all trees located on site and adjacent to the proposal site.
- e) No soakaways are to be routed within the RPA of any retained tree that is on or adjacent to the site.
- f) No topsoil, excavation or reprofiling works are to be undertaken within the RPA of any retained tree that is on or adjacent to the application site.
- g) No storage of materials is to occur within the RPA of any retained tree on or adjacent to the site. This includes, but is not limited to, topsoil and building materials.
- h) No variations to any approved tree protection schemes shall be carried out without obtaining the prior written approval of the district planning authority.

8.4 Design Considerations

No design considerations are apparent for this site.

8.5 Arboricultural Supervision

Arboricultural supervision is not thought to be necessary but is at the discretion of the local planning authority. It is recommended that a onetime check be made prior to any construction activity commencing and following the installation of the protective measures to ensure that these have been installed correctly and are in line with the protection drawing.

8.6 Access and Materials Delivery

A suitable banksman should be available to aid in the delivery of materials to advert accidental damage occurring to any trees in or outside of the site.

8.7 Ground Protection

Ground protection is not required.

9. Arboricultural Method Statement (AMS)

The following method statement/s has been designed to cover a range of activities and project sizes and not every section is applicable to all projects. Specific methodologies are included to cover activities that are specific to the project covered by the report but other sections are more generic. The client should study the entire document below and apply the methodologies that are relevant to the commentary of this report.

9.1 The use of Arboricultural Method Statement/s

The Arboricultural method statement should be read in conjunction with the tree protection/ constraints drawing/s that are provided within the appendixes and as a separate PDF which should be printed at the annotated scale.

9.2 Pre-Commencement Meeting

It is advised that a pre-commencement site meeting is held with contractors who are responsible for operating machinery and vehicles on site. The meeting will firstly highlight the potential damages that can be caused when operating machinery within close proximity to the crowns, stems and root protection areas of protected trees, but thereafter emphasise the importance of careful manoeuvring of machinery and vehicles close to these protected areas. The use of “banksmen” as guides for machinery and vehicle drivers is also to be strongly recommended and implemented.

The meeting will also highlight the importance of the root protection areas and the rules surrounding such as set out in **Section 8.3** (prohibited activities within or close to the root protection area).

9.3 The Erection of Protective Barriers and Fences

Prior to any demolition, or construction activities commencing, the recommended and suitable protection barriers should be erected and set out around the root protection areas as shown in the tree protection plan. Checks should be made to ensure that these have been suitably erected and are of sufficient construction to provide the necessary protection from the demolition and construction activities. These protective fences should not be removed until construction is fully complete.

9.4 Tree Works

Any tree works/ tree removals, access facilitation pruning etc, should be carried out by a suitably competent and qualified arborist and in accordance with BS3998 tree work recommendations. Suitable specific method statements should be provided by the arboricultural contractors.

9.4.1 Pre-Commencement Considerations for Tree Works

It is strongly advised that prior to any tree work being carried out, suitable checks are made to ensure that no wildlife habitat is destroyed or disturbed with regards to bats, birds and squirrels.

9.4.2 Construction Traffic, Heavy Plant Machinery and Access Routes

It is important that the site planner studies the root protection areas outlined in the tree constraints and protection measures plan. All heavy plant machinery, vehicles and excavation works will need to be prohibited in these areas. Access routes for machinery and vehicles should ideally be routed around these areas. Where this is not possible and access routes need to pass over a root protection area then a Geotech, gravel/ hardcore filled ground protection matting should be used to minimise the impacts of compression and compaction on the root structures. The exact specifications of such matting should be sourced and calculated by the site planner depending on the size and weight of the vehicles and/or machinery to be used.

9.4.3 The Removal of Hard Surfaces that overlay the RPA

Hard surfaces that overlay an RPA must be removed carefully and without intruding into the soil environment below. The surface may be broken into smaller parts, using hand held powered devices and each part removed and disposed of in a specified waste area away from the RPA. If heavy machinery such as an excavator is necessary and the work cannot be completed by hand, then the machinery must be positioned outside of the RPA so as not to over-compact any existing soil area within the RPA. The excavator arm can be used to reach into the area and carefully and under supervision, be used to scrape back and remove the surface material. Where it is not possible to position the machinery outside of the RPA, then a suitable ground protection matting must be used to prevent compaction of the soil environment. Suitable ground protection should be in the form of a geocell/cellweb aggregate filled matting. Details for ground protection matting are easily obtained online.

9.4.4 Excavation Around the Periphery of an RPA

When excavations are necessary close to the edge of an RPA, this should be done carefully and by hand using hand tools only. Should minor root mass be found that does not exceed 25mm in diameter, then this can be pruned and removed. This should not be excessive and is only applicable for minor root mass.

10. References

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- The Conservation of Habitats and Species Regulations 2017 (Amendment). SI 2017/1012.
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11. Appendices

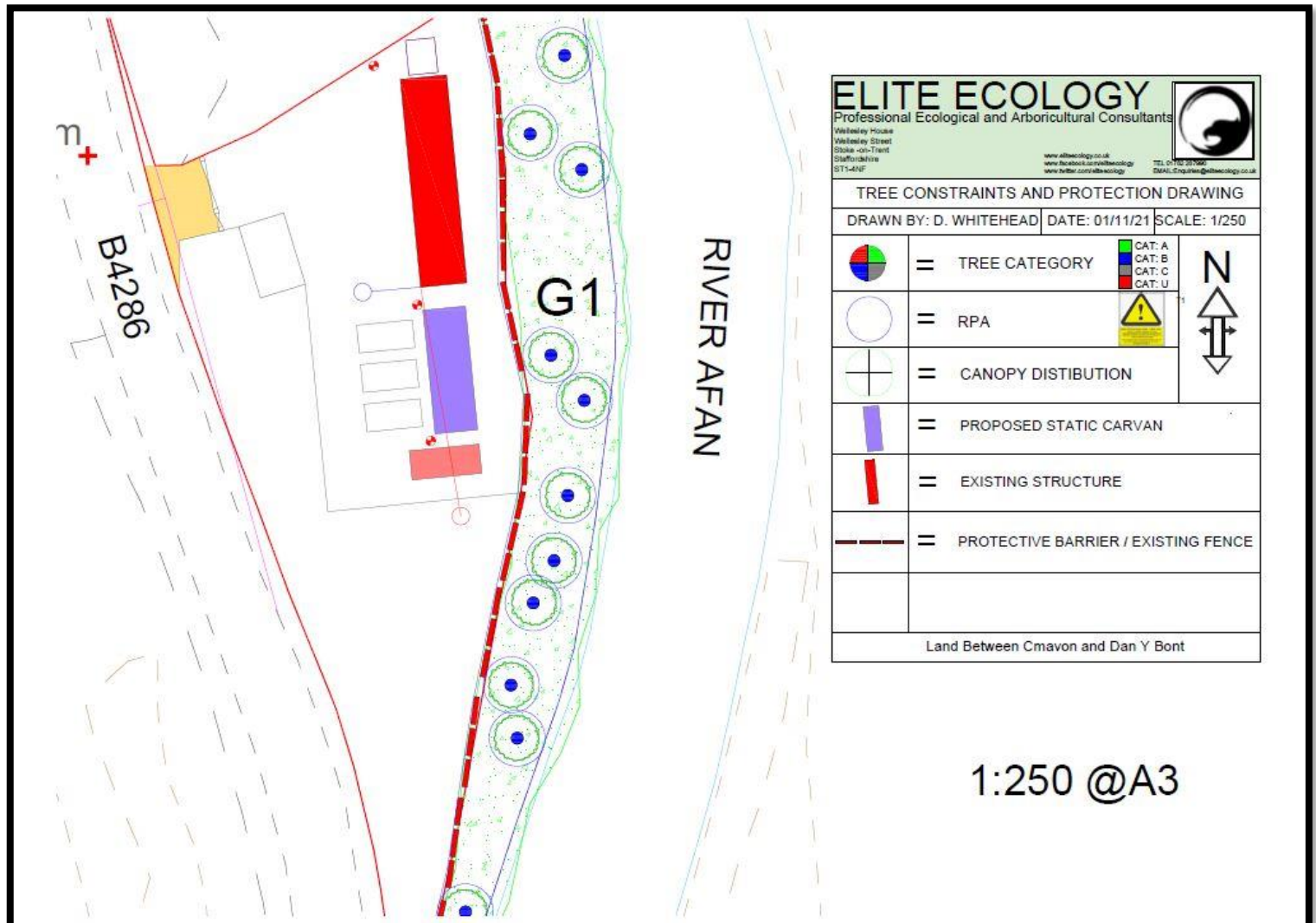
Appendix A: Tree Constraints and Protection Drawings

Appendix B: Photographic Records

BS5837:2012 Tree Survey and Arboricultural Impact Assessment

Appendix A: Tree Constraints and Protection Drawings

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Appendix B: Photographic Records

Plate 1: Existing fence line with G1 behind.



Plate 2: Existing stable block.



12. Notice to Readers: Conditions of this Report

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The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

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No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.