



Elite Ecology

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**Greenmoor,
Buxton**



BS5837:2012 Tree Survey and Arboricultural Impact Assessment

June 2023



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0. Executive Summary

- 0.1** This report has been prepared at the request of Mr. Tom McEntree. Elite Ecology were commissioned to undertake a BS 5837 Tree Survey and Arboriculture Impact Assessment at Greenmoor, Carlisle Road, Buxton, Derbyshire, SK17 6XE (Central OS Grid Reference: SK 04952 73857). This survey effort involved both a desktop study and field survey being undertaken.
- 0.2** The current proposals are to convert the existing building into a separate residential dwelling. All work is to remain upon and within the existing footprint and is expected to be predominantly internal. There are no new building works, extensions, or demolition work proposed.
- 0.3** 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).
- 0.4** 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.
- 0.5** In total the survey recorded twenty-three individual trees and one group of trees. These were native and non-native broadleaf specimens. The age class ranges from **semi-mature** to **early-mature**, and the general overall condition was thought to be **good**.
- 0.6** 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.

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr. Tom McEntree. Elite Ecology were commissioned to undertake a BS 5837 Tree Survey and Arboriculture Impact Assessment at Greenmoor, Carlisle Road, Buxton, Derbyshire, SK17 6XE (Central OS Grid Reference: SK 04952 73857). 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**, ACIEEM, MArbA, is a Company Director, and is currently qualified to RQF level 6 with a 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 one large residential garden with additional outbuildings. The site contains a range of tree species, both within the grounds and along its boundaries and periphery. Both coniferous and broadleaf species were present on the site, as well as native and non-native species present.

1.3.1 Root Barriers

No significant root barriers were observed, with the exception of the existing buildings, roads, and their associated foundations.

1.3.2 Soils

A search of the Landis.org.uk national soils database describes the soil in this area as slowly permeable wet very acid upland soils with a peaty surface. This information suggests that the soil here has a low 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

No significant topographical features relevant to this report were observed.

Figure 1: An aerial image showing the location and survey area at Greenmoor, Buxton.



1.4 Current Proposals

The current proposals are to convert the existing building into a separate residential dwelling. All work is to remain upon and within the existing footprint and is expected to be predominantly internal. There are no new building works, extensions, or demolition work proposed.

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.

➤ **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

A search of the local authority interactive planning map has revealed that two areas of protected trees exist at the site. One area is at the western boundary Ref: DCCTPO54 and another at the north-east of the site (within neighbour's garden) Ref: HPTPO198. Trees in these areas are protected by tree preservation order. The search has also revealed that the site itself is within a conservation area, and therefore the trees within the grounds are also protected. This should be seen as guidance only.

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 twenty-three individual trees and one group of trees. 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						
T1	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	EM	Good	1	20	3	8	8	8	5	880	20+	346	10.5	
T2	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	EM	Good	1	20	9	8	2	8	5	920	20+	379	11	
T3	Common sycamore (<i>Acer pseudoplatanus</i>)	B	SM	Good	1	20	3	3	3	3	5	540	20+	132	6.5	
T4	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	EM	Good	1	20	9	8	8	8	4	800	20+	289	9.6	

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T5	Common lime (<i>Tilia × europaea</i>)	B	SM	Good	1	20	4	4	4	4	5	700	20+	221	8.4	
T6	Common lime (<i>Tilia × europaea</i>)	B	SM	Good	1	18	6	3	6	3	4	500	20+	113	6	
T7	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	SM	Good	1	18	7	1	6	2	4	500	20+	113	6	
T8	Common lime (<i>Tilia × europaea</i>)	B	SM	Good	1	18	2	2	2	2	4	400	20+	72	4.8	
T9	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	SM	Good	1	18	7	2	7	2	4	600	20+	163	7.2	
T10	Horse chestnut (<i>Aesculus hippocastanum</i>)	B	EM	Good	1	18	7	2	7	2	4	500	20+	113	6	
T11	Common lime (<i>Tilia × europaea</i>)	B	SM	Good	1	18	6	2	4	2	4	480	20+	102	5.7	
T12	Common lime (<i>Tilia × europaea</i>)	B	SM	Good	1	18	6	3	7	5	4	700	20+	221.5	8.4	
T13	Common sycamore (<i>Acer pseudoplatanus</i>)	B	EM	Good	1	20	3	6	7	7	3	790	20+	283.3	9.5	Protected by tree preservation order
T14	Common sycamore (<i>Acer pseudoplatanus</i>)	B	SM	Good	1	18	1	1	4	4	4	400	20+	72	4.8	Protected by tree preservation order

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T15	Common sycamore (<i>Acer pseudoplatanus</i>)	B	SM	Good	1	18	2	6	10	7	3	550	20+	136.7	6.6	Protected by tree preservation order
T16	Silver birch (<i>Betula pendula</i>)	B	SM	Good	1	16	3	3	3	4	3	300	20+	40.6	3.6	
T17	Common ash (<i>Fraxinus excelsior</i>)	B	EM	Good	1	20	5	5	7	5	4	610	20+	167.3	7.3	
T18	Common sycamore (<i>Acer pseudoplatanus</i>)	B	SM	Good	1	20	6	6	6	6	5	520	20+	120.7	6.2	
T19	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	2	18	3	3	3	3	3	310	20+	162.7	7.2	
												520				
T20	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	1	18	3	3	3	3	3	370	20+	60.7	4.4	
T21	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	1	18	3	3	3	3	3	430	20+	81.6	5.1	
T22	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	1	18	3	3	3	3	3	650	20+	191	7.8	
T23	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	2	18	3	3	3	3	3	400	20+	98.4	5.6	
												250				

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G1	Western red cedar (<i>Thuja plicata</i>)	B	SM	Good	-	18	3	3	3	3	3	RANGE 200-450	20+	-	MAX 5.4	
	Leyland cypress (<i>Cupressus</i> × <i>leylandii</i>)															
TOTALS		Category		Life		Condition		NOTES:								
		Grading		Stages				All trees at the site, unless otherwise stated, are within a conservation area, with T13, T14, and T15 being part of a protected area of trees which is covered by a tree preservation order (blanket).								
		A	0	Y	0	GOOD	24	All trees were observed to be in a generally good overall condition with only minor defects throughout.								
		B	24	SM	18	FAIR	0									
		C	0	EM	6	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, seven tree species were identified on and around the survey site. The trees identified were:

- **T1, T2, T4, T7, T9 and T10:** Horse chestnut (*Aesculus hippocastanum*).
- **T3, T13, T14, T15 and T18:** Common sycamore (*Acer pseudoplatanus*).
- **T5, T6, T8, T11 and T12:** Common lime (*Tilia × europaea*).
- **T16:** Silver birch (*Betula pendula*).
- **T17:** Common ash (*Fraxinus excelsior*).
- **T19, T20, T21, T22 and T23:** Western red cedar (*Thuja plicata*).
- **G1:** Leyland cypress (*Cupressus × leylandii*).

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.

LIFE STAGES		CONDITION		BS 5837 CATEGORY		
Subject Tree/ Group	Life Stage	Subject Tree/ Group	Condition	Subject Tree/ Group	Category	Sub cat
None	Young	All Trees	Good	None	A	
					A	1
					A	2
					A	3
T3, T5, T6, T7, T8, T9, T10, T11, T12, T14, T15, T16, T18, T19, T20, T21, T22, T23, G1.	Semi-mature	None	Fair		B	
					B	1
				All trees at the site being of a reasonable quality and value.	B	2
					B	3
T1, T2, T4, T10, T13, T17.	Early-mature	None	Poor	None	C	
					C	1
					C	2
					C	3
None	Mature	None	Dead	None	U	
None	Over-mature					

Figure 2: 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

All trees at the site are of a predominantly **semi-mature** to **early mature** life stage, display a generally **good** overall condition with no major defects that are visually apparent, and provide a high level of amenity value for residents, as well as within the surrounding landscape.

None of the trees are highly visible to the general public and are more valuable as collective groups than as individual trees.

The trees present a high habitat value for nesting birds.

None of trees were found to contain significant cavities or defects and no sign of pathogen or disease was observed.

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

Minor structural faults were observed throughout:

- Minor deadwood less than 25mm in diameter.

No major structural defects were observed on the subject trees. Minor deadwood was observed throughout.

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 were 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
- Topographical Drawing

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 convert the existing building into a separate residential dwelling. All work is to remain upon and within the existing footprint and is expected to be predominantly internal. There are no new building works, extensions, or demolition work proposed.

7.3 Development Impacts

The current proposals are strictly internal with no new build, or demolition works required. The potential for works to impact the subject trees at the site is considered low/ unlikely. No works or access within any of the specified RPA's has been identified and due to topography and levels at the site, accidental access into these areas by vehicles or machinery is considered unlikely.

7.3.1 Root Protection Areas and Conflicts

Root protection areas have been calculated in accordance with BS5837:2012 and are shown as blue circles/lines in the tree constraints and protection drawings.

Areas of an RPA that are restricted or covered by an existing hard surface have been highlighted with magenta coloured lines.

Areas requiring ground protection or specifically designed protection measures have been highlighted as a cyan coloured block hatched area.

7.3.2 Ground Level Changes around Trees

Significant ground level changes within the RPA's of retained trees is not expected.

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 access facilitation works are required.

7.3.4 Tree Removals

No trees are required to be removed.

7.3.5 Tree Retention

All trees can be retained.

7.3.6 Amenity and Area Impacts

No impacts are foreseen to overall area character, or public/landscape amenity. All significant trees can be retained and protected.

7.3.7 Spatial Relationship of Trees and Post Development Pressure

No post development pressure to carry out works upon the subject trees has been identified.

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.

8. Recommendations

8.1 Tree Work Recommendations

No tree work is recommended at this time.

8.1.1 Remedial Tree Works

No remedial tree works are required.

8.1.2 Tree Removal/Felling

No trees are proposed to be removed.

8.1.3 RPA Protection

Protection measures at the site are considered unnecessary under the current proposals. No excavations, no demolition/building works, or external works are proposed. The site is freely accessible from the driveway area with accidental access into the RPA's unlikely.

8.2 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.

8.3 Design Considerations

No design considerations are relevant for this project.

8.4 Arboricultural Supervision and Tree Protection

Site supervision is not necessary.

8.5 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 property.

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 8.2** (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 handheld 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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Mattheck, C. and Belier, H. (1994) *The body language of trees*. Research for amenity trees No. 4. HMSO, London.

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Stouts R. G. and Winter T. G. (1994) *Diagnosis of ill-health in trees*, Research for amenity trees No. 2. HMSO, London.

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Watson, G. and Green T. (2011) *Fungi on trees*. Arboricultural Association, Stonehouse, Gloucestershire.

Wildlife and Countryside Act 1981 (and amendments) (c.69). London: HMSO.

11. Appendices

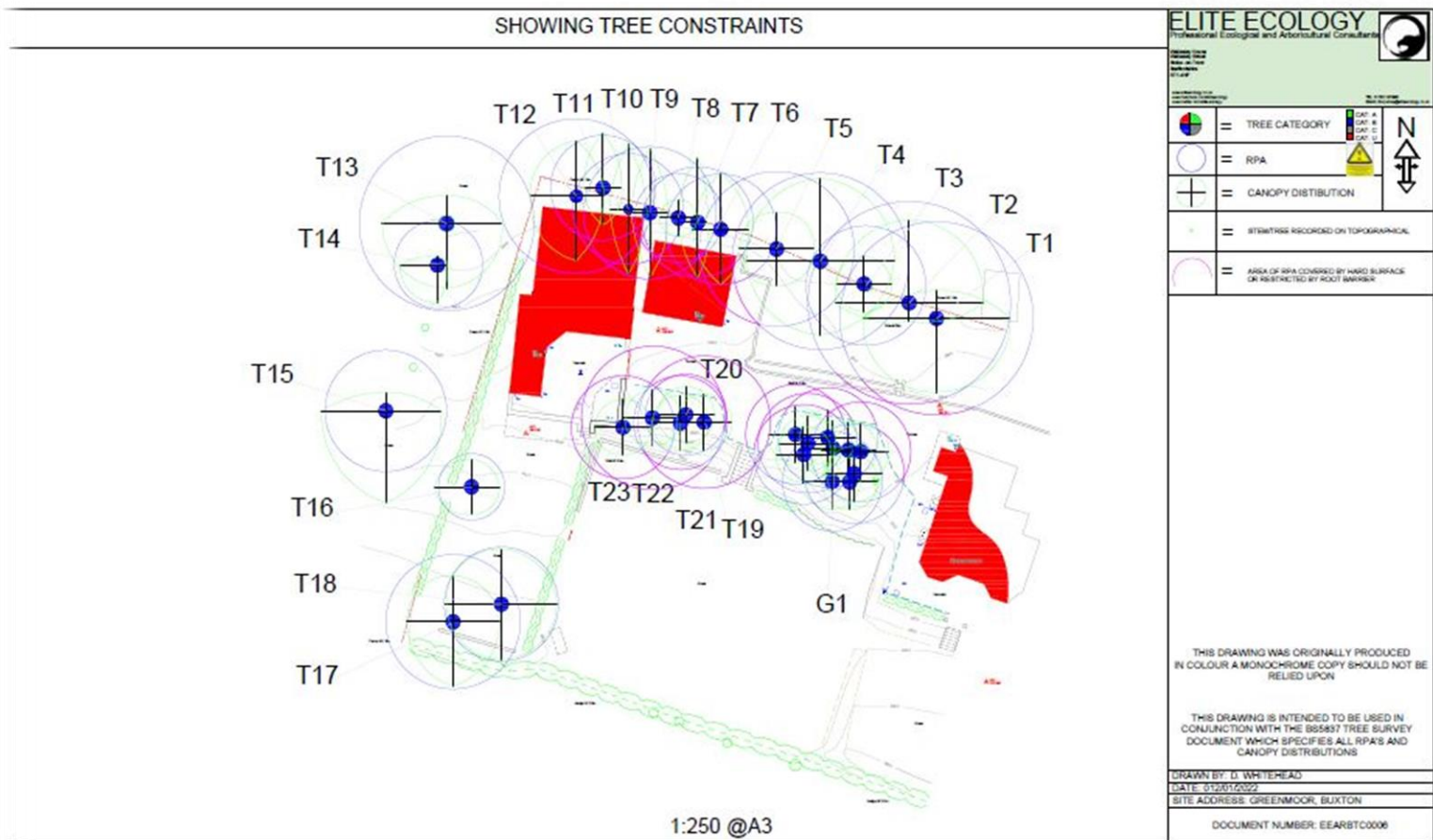
Appendix A: Tree Constraints Drawing

Appendix B: Preliminary Tree Protection Drawing

Appendix C: Photographic Records

Appendix A: Tree Constraints Drawing

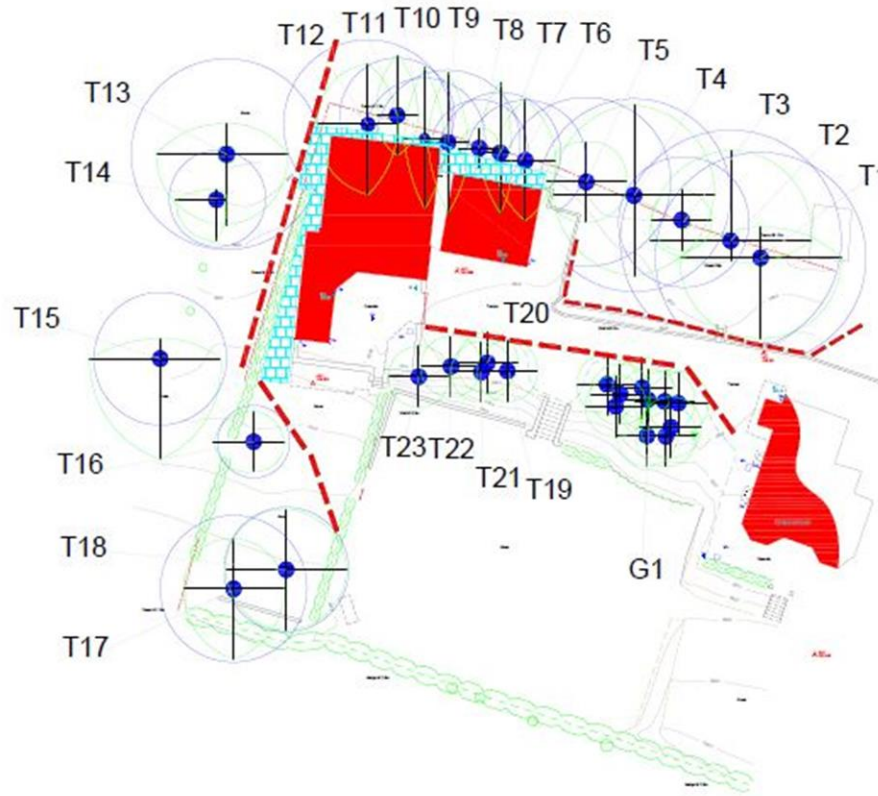
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Appendix B: Preliminary Tree Protection Drawing

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PRELIMINARY TREE PROTECTION PLAN



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ELITE ECOLOGY Professional Ecological and Arboricultural Consultants											
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THIS DRAWING WAS ORIGINALLY PRODUCED IN COLOUR A MONOCHROME COPY SHOULD NOT BE RELIED UPON THIS DRAWING IS INTENDED TO BE USED IN CONJUNCTION WITH THE BS5837 TREE SURVEY DOCUMENT WHICH SPECIFIES ALL RPAS AND CANOPY DISTRIBUTIONS DRAWN BY: D. WHITEHEAD DATE: 12/01/2022 SITE ADDRESS: GREENMOOR, BUXTON DOCUMENT NUMBER: EEARBTC0007											

Appendix C: Photographic Records

Plate 1: T1, T2, & T3.



Plate 2: T4 and T5.



Plate 3: T6 – T12.



Plate 4: T13 and T14.



Plate 5: T15.



Plate 6: T16, T17, and T18.



Plate 7: T19 – T23.



Plate 8: G1.



12. Notice to Readers: Conditions of this Report

All reports are certified products and cannot be shown, copied, or distributed to third parties without the written permission of Elite Ecology. No liability is accepted for the contents of the report, other than to that of the client(s). If any part of this report is altered without the written permission of Elite Ecology, then the whole report becomes invalid.

Elite Ecology agrees to supply ecological and arboricultural consulting services and advice of a preliminary or thorough nature as advised or commissioned. Upon commissioning Elite Ecology to undertake the work, the client(s) grant access to the site upon the agreed date. If no site access is available upon this date, Elite Ecology holds the right to charge the client(s) for lost staffing time and additional travel costs.

Elite Ecology undertake all site surveys with reasonable skill, care, and diligence, within the terms of the contract that has been agreed with the client and abiding by the Elite Ecology Terms and Conditions. The actions of the surveyors on site, and during the production of the report, were undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management.

The latest good practice guidelines put in place by Natural England or the relevant statutory conservation bodies have been followed by the surveyors on site. If those methodologies fail to identify a protected species during the survey efforts, no responsibility can be attributed to Elite Ecology. If any of these guidelines are adapted between the date(s) of the surveys being undertaken and the submission of this report, then Elite Ecology takes no responsibility for this.

Should any equipment be damaged or lost on site at the fault of the client(s), then Elite Ecology withholds the right to charge 100% above the current market value for that exact product or the nearest similar product.

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.

Elite Ecology has been provided with full payment for this report and thus the product has been released to the client(s) for the purpose of their planning application. If any part of the report is lost or altered without the written permission of Elite Ecology, then the entire report becomes invalid. Due to the potential for continual change within the natural world, this report is valid for **1 year only** from the date of the last survey visit. If this report is submitted after the 1 year deadline, then a further updated inspection will be required to ascertain whether the site remains in the same condition as it was when initially inspected.

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.