



LAKELAND
TREE CONSULTANCY
ARBORICULTURAL PLANNING SPECIALIST

Arboricultural Impact Assessment

Underwood
The Hill
Millom
LA18 5EZ

April 2024

Project details

Job no.	LTC237
Site	Underwood, The Hill, Millom, LA18 5EZ
Client	Mr and Mrs Slack
Agent	HM Architecture (NW) LLP
Arboriculturist	Jennie Keighley PhD MSc MArborA
Local authority	Cumberland Council
Date	24 April 2024
Issue	Final issue for planning

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1. Executive Summary

- 1.1 This arboricultural impact assessment relates to a planning application at the site in question for the proposed erection of two ancillary buildings.
- 1.2 A tree survey identified six individual trees, four groups of trees and a woodland edge with potential to be impacted by the works. These were located both within the site and on neighbouring land.
- 1.3 Assessment of the proposal plan indicates that construction of the development will require the removal of part of a low quality group of Leyland cypress and a horse chestnut that is considered unsuitable for retention regardless of the development due to safety concerns. Some facilitation pruning works will be required to two retained beech trees.
- 1.4 The wider site can accommodate new tree planting in order to compensate for the development-related losses, the provision of which can be secured by means of a condition attached to a planning approval.
- 1.5 The retained trees can be adequately protected by means of BS5837-specification tree protection fencing, which is to be laid-out as shown on the appended tree protection plan, and by following both the site-specific and general tree protection recommendations made herein.

2. Introduction

2.1 The clients' agent instructed Lakeland Tree Consultancy to survey the trees at the site in question and undertake an arboricultural impact assessment (AIA) in relation to a planning application for the proposed erection of two ancillary buildings.

2.2 Arboriculturist Jennie Keighley PhD MSc MArborA visited the site on 30 October 2023 and surveyed all trees with reasonable potential to be impacted by the proposed works in accordance with the British Standard guidance BS5837 (2012) *Trees in relation to design, demolition and construction - recommendations*.

2.3 This report will assess the potential impacts of the proposed development upon the existing tree population and outline the tree protection measures needed to prevent retained trees from being damaged during the construction works. It should be supplied to the Local Planning Authority (LPA) to allow them to determine the planning application and its contents should be adhered to by the appointed contractor, should the development be approved.

3. The Site and Tree Population

3.1 The site sits in a rural location between the village of The Hill and the town of Millom, Cumbria, and currently forms the northern corner of Underhill, a property comprising existing residential buildings, outbuildings, gardens and pasture (see Figure 1). The site is bounded to the north by the neighbouring quarry and its access track, to the east and south by further extents of the Underhill property and to the west by woodland. There are trees lining the site boundaries and growing as individuals within the site.

3.2 The tree survey identified six individual trees, four groups of trees and a woodland edge with potential to be impacted by the proposed works. These were located both within the site and on neighbouring land. The positions of the surveyed trees in relation to the existing site are shown on the appended tree survey plan.

3.3 The retention value of the surveyed trees was categorised using the guidance given in Table 1 of BS5837 (2012), which is explained in the appended tree survey schedule. Three individual trees, two groups of trees and the woodland were categorised as moderate quality (B-category), two groups were categorised as low quality (C-category) and three trees were categorised as unsuitable for retention (U-category) due to their limited remaining life expectancies.



Figure 1: Google Earth image of application site (dated 24 May 2023)

4. The Development Proposal and Arboricultural Impact Assessment

The proposal

- 4.1 The proposed site plan provided (drawing number 5680 (PL) 05 by HM Architecture) indicates that the proposal is for the erection of two ancillary buildings - a stable near the western boundary and a triple garage on the former tennis court, between the existing barn and Bowers Cottage.

Services and drainage

- 4.2 The proposed site plan provided does not show proposed services or drainage at this stage. Any new service trenches, ground source heat pump infrastructure, electric car charging points and connections, or foul and surface water drainage required, including pipes, channels, sewage treatment plants or surface water attenuation features should be sited so as to avoid the root protection areas (RPAs) of retained trees.

Tree removals

- 4.3 As shown on the appended tree removal plan and in Table 1, below, construction of the development will require the removal of one U-category tree and part of a C-category group. It is noted that U-category horse chestnut T1 is recommended for removal regardless of the development proposals, as it is at risk of full stem or rootplate failure due to an established honey fungus infection and an associated loss of structural integrity.

Table 1: Proposed tree removals

ID no.	Species	BS5837 cat.	Recommendation
T1	Horse chestnut	U	Remove due to safety concerns regardless of development proposals
G2	Leyland cypress	C	Remove southern end of group, as shown on the tree removal plan, in order to accommodate proposed stable
Total tree removals			1no. U-category tree Part of 1no. C-category group

Tree works

4.4 Anticipated facilitation pruning requirements are shown in the preliminary tree works schedule below (Table 2). The proposed works should be reviewed prior to construction, should the development be approved, in case any aspects of the site design or layout have changed since this report was prepared. All tree works should be carried out by a suitably qualified, experienced and insured arborist and must be in accordance with the British Standard guidance BS3998 (2010) *Tree work - recommendations*.

Table 2: Preliminary tree works schedule

ID no.	Species	Recommendation
G1	2no. beech	Prune to lift crowns to create a 4m ground clearance over existing vehicle access

Compensatory tree planting

4.5 The wider site is of sufficient size to accommodate new tree planting in order to compensate for the development-related losses. The specification, delivery and aftercare of replacement planting can be secured by means of a suitably worded condition attached to a planning approval and should be implemented in accordance with the British Standard guidance, BS8545 (2014) *Trees: from nursery to independence in the landscape - recommendations*.

5. Protection of Retained Trees

Tree protection fencing

- 5.1 Adequate protection of the retained trees during the development is paramount in ensuring their health and survival. Creating a construction exclusion zone by erecting temporary fencing around the perimeter of the trees' RPAs is the most effective way of protecting them during the works. It is important that tree protection fencing is secured into the ground, so that it cannot be easily moved or shunted out of place whilst the construction works are underway.
- 5.2 For the development in question, the default BS5837 (2012) tree protection fencing specification, as shown on the appended illustration, is expected to be suitable. An alternative fencing specification can be agreed with the LPA Tree Officer prior to commencement, if required. The fencing is to be laid-out as indicated on the appended tree protection plan prior to any works on site, including site preparation and deliveries, and shall remain in place until the development is complete and all associated materials have been removed from site. Once erected, the tree protection fencing shall be labelled at regular intervals with all-weather notices stating 'TREE PROTECTION AREA - KEEP OUT!'.

Preliminary arboricultural method statement

5.3 An arboricultural method statement intends to identify site operations with reasonably foreseeable potential to adversely impact the health of trees within or close to the development site and outlines the necessary actions and precautions required during the development process to minimise the risk of causing damage to trees (see Table 3, below).

5.4 As this arboricultural method statement is provided pre-determination, it should be considered preliminary, pending the confirmation of all design details, such as services, drainage, boundary treatments and detailed construction specifications. A detailed arboricultural method statement, including a sequence of works and program of site monitoring and arboricultural supervision, can be conditioned to a planning approval.

Table 3: Site-specific guidance for operations within tree RPAs

Operation	BS5837 Guidance
Erection of garage	<ul style="list-style-type: none"> • The proposed garage sits close to the RPA of a large pine tree within group G4 • Whilst it is noted that there is an existing hard surface in place in the area in which the garage will be sited, there must be no excavation into the soil within the 'no dig area' marked in yellow on the tree protection plan, at the rear right of the new garage, in case there are any significant tree roots growing under the existing surface • The edge of the existing hard-surfaced area must be fenced-off where adjacent to trees to form a construction exclusion zone, as indicated on the tree protection plan

General tree protection recommendations

5.5 The following recommendations should be heeded throughout the development in order to prevent damage to retained trees: -

- The tree protection fencing shall be installed prior to any works on site, with the exception of tree works and vegetation removal
- Once in place, the tree protection fencing shall not be moved until the development is complete and all associated materials have been removed from site, unless authorised in advance by the Project Arboriculturist or LPA Tree Officer
- Vehicles and plant shall not operate within RPAs, unless there is an existing hard surface in place or load-appropriate ground protection has been installed
- Soil levels within RPAs shall not be raised or lowered, unless authorised in advance by the LPA
- Soil shall not be scraped, skimmed or mechanically compacted within RPAs. The majority of tree roots are found in the top 600mm of soil, so even a shallow scrape can cause detrimental root damage
- Materials, equipment, vehicles, skips, demolition arisings, stone or earth shall not be stored within soft-surfaced RPAs
- Oil, fuel, chemicals, cement or any other material with potential to cause damage to trees shall not be poured, stored, mixed, washed or discharged within tree RPAs. Consideration shall also be given to the topography of the site to prevent materials running towards trees
- Services and drainage shall not be installed below ground level within RPAs, unless authorised in advance by the LPA
- Surface water run-off shall not be re-diverted into or out of RPAs
- Fires shall not be lit within 15m of any tree crown or RPA
- Temporary buildings, including welfare units and portable toilets, shall not be sited within RPAs
- Notice boards, telephone cables, anchorage for equipment or any other services shall not be attached to trees
- Deliveries by crane shall be supervised by the site manager, ensuring the vehicle operates in a manner in which trees are not put at risk of damage

6. Tree Preservation Orders, Conservation Areas and Other Legal Constraints

- 6.1 Trees may be subject to legal protection, by means of being covered by a Tree Preservation Order (TPO) or by being located within a Conservation Area. It is an offence to cut down, uproot, top, lop, cause wilful damage or destruction of protected trees without the appropriate consent from the Local Authority. Fines for carrying out unauthorised works to protected trees can be considerable. The Local Authority must be given six-weeks' notice prior to the removal of trees within a Conservation Area with a stem diameter greater than 75mm (at a height of 1.5m above ground level). To carry out works on trees covered by a TPO, a formal application must be made to the Local Authority, which should be determined within an eight-week period.
- 6.2 According to the interactive mapping service on Cumberland Council's website (<https://copelandbc.maps.arcgis.com>; searched 24 April 2024), the site is not located within a Conservation Area, but a number of the surveyed trees are the subject to TPO protection. Trees T4, T5 and T6, groups G3 and G4, and possibly the northern part of group G2 are evidently covered by Copeland Borough Council's TPO No. 46 '*Underwood, The Hill*' 1992. However, it is not possible to view a copy of the Order online and therefore not possible to confirm which tree species are covered by this TPO. It is advisable to contact the Council directly to check for any statutory tree protection prior to carrying out any tree works that are not authorised as part of a detailed planning approval.
- 6.3 It should be noted that, subject to certain exemptions, a felling license must be obtained from the Forestry Commission for felling of trees that will equate to more than five cubic metres of timber in a calendar quarter. This does not, however, apply to tree removals that are authorised under a detailed planning approval.

- 6.4 Hedgerows meeting a particular series of criteria may be classed as ‘important’ and afforded legal protection under the Hedgerows Regulations 1997. It is an offence to remove an important hedgerow without appropriate consent from the Local Authority.
- 6.5 Birds, bats and certain other species are protected by the Wildlife and Countryside Act 1981. It is an offence to disturb wild birds within the nesting season (from March to August inclusive) and bats at any time of year, and this must be taken into account whilst carrying out tree works. The advice of a suitably qualified and licensed ecologist must be sought if the presence of birds, bats or other protected species is identified before or during tree works.

References

British Standards Institute (2014) *BS8545 Trees: from nursery to independence in the landscape - recommendations*

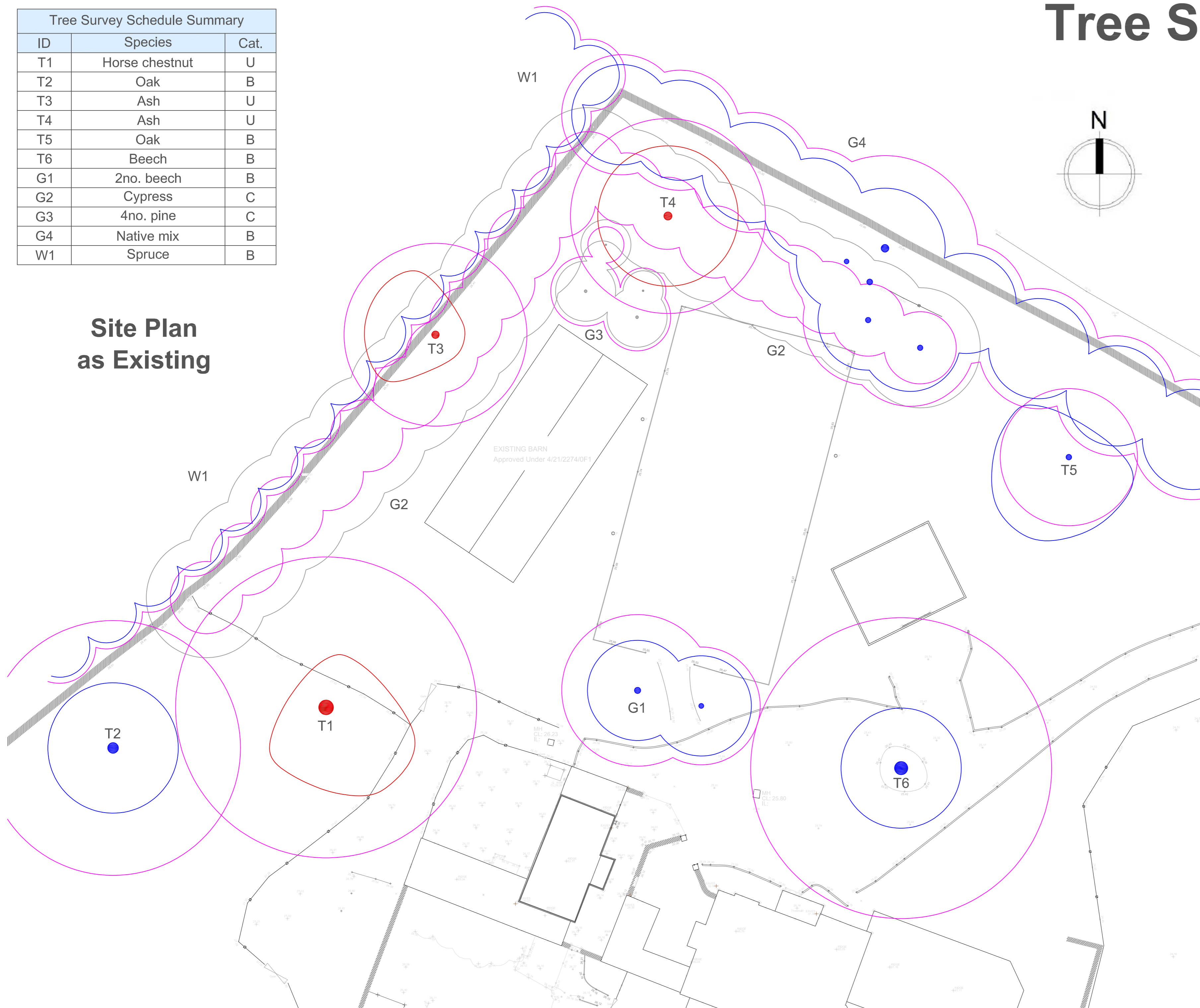
British Standards Institute (2012) *BS5837 Trees in relation to design, demolition and construction - recommendations*

British Standards Institute (2010) *BS3998 Tree work - recommendations*

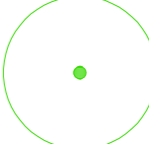
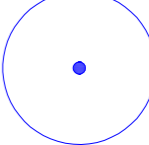
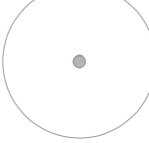
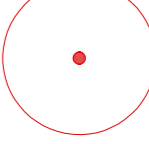
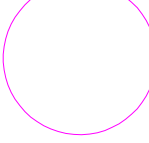
Tree Survey Plan

Tree Survey Schedule Summary		
ID	Species	Cat.
T1	Horse chestnut	U
T2	Oak	B
T3	Ash	U
T4	Ash	U
T5	Oak	B
T6	Beech	B
G1	2no. beech	B
G2	Cypress	C
G3	4no. pine	C
G4	Native mix	B
W1	Spruce	B

Site Plan as Existing



BS5837 Tree retention categories:

-  Category A
High quality tree
-  Category B
Moderate quality tree
-  Category C
Low quality tree
-  Category U
Unsuitable for retention
-  Root protection areas (RPAs)

Identification numbers:

- T = individual tree
- G = group of trees
- W = woodland
- H = hedge

Site:

Underwood
The Hill
Millom
LA18 5EZ

Clients:

Mr and Mrs Slack

Date: October 2023

Scale: 1:250 at A2

Drawing: LTC237-TSP

Drawn by: JK



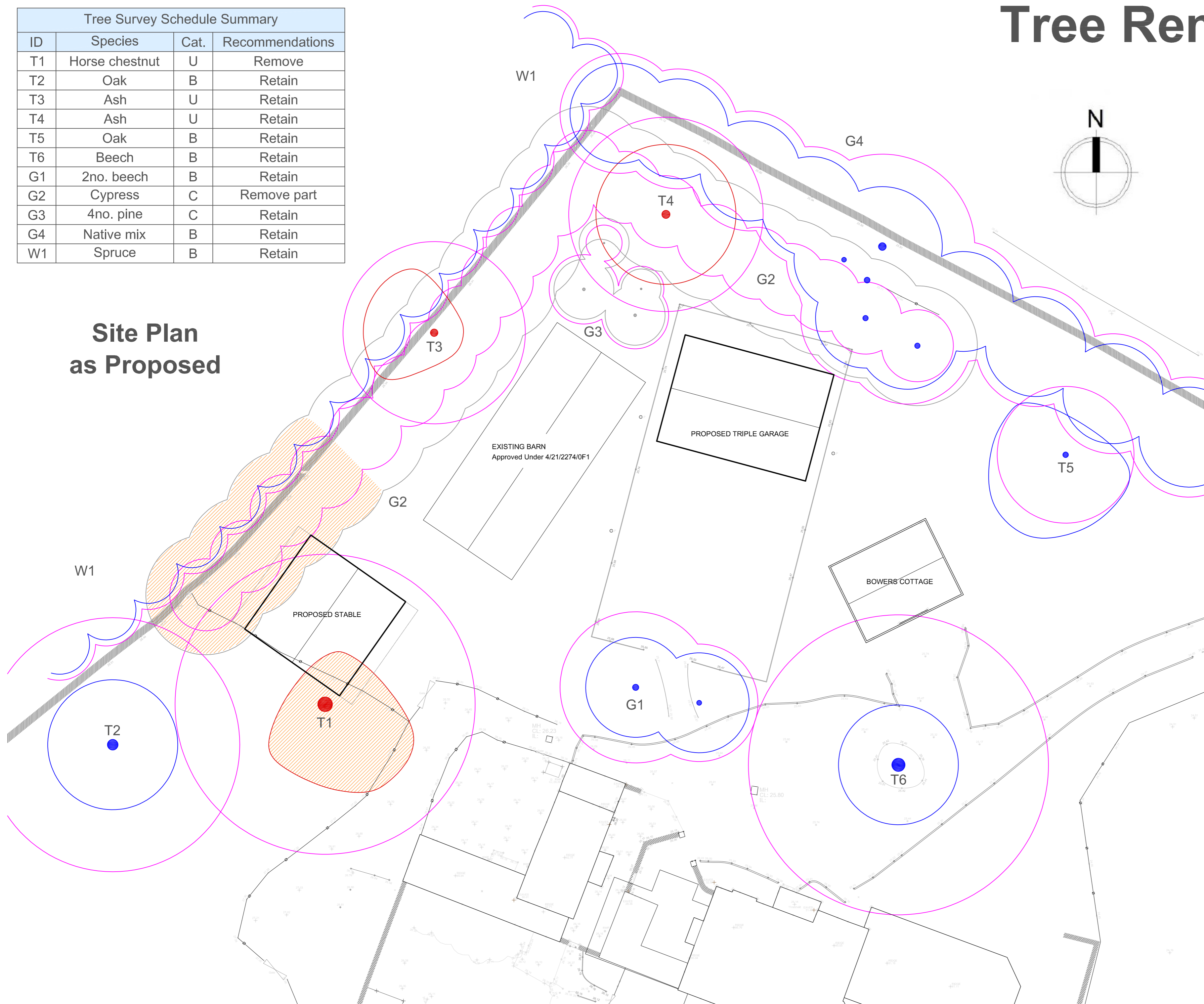
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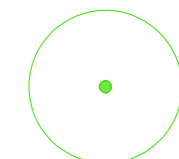
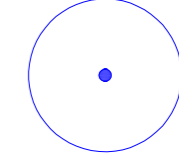
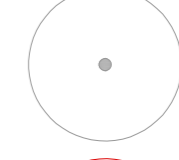
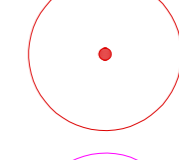
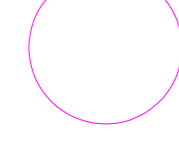

Tree Removal Plan

Tree Survey Schedule Summary			
ID	Species	Cat.	Recommendations
T1	Horse chestnut	U	Remove
T2	Oak	B	Retain
T3	Ash	U	Retain
T4	Ash	U	Retain
T5	Oak	B	Retain
T6	Beech	B	Retain
G1	2no. beech	B	Retain
G2	Cypress	C	Remove part
G3	4no. pine	C	Retain
G4	Native mix	B	Retain
W1	Spruce	B	Retain

Site Plan as Proposed



BS5837 Tree retention categories:

-  Category A
High quality tree
-  Category B
Moderate quality tree
-  Category C
Low quality tree
-  Category U
Unsuitable for retention
-  Root protection areas (RPAs)
-  Proposed tree removals

Site:
Underwood
The Hill
Millom
LA18 5EZ

Clients:
Mr and Mrs Slack

Date: April 2024

Scale: 1:250 at A2

Drawing: LTC237-TRP

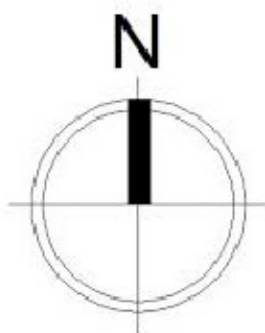
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Tree Protection Plan



Site Plan as Proposed

-  Category A
High quality tree
-  Category B
Moderate quality tree
-  Category C
Low quality tree
-  Category U
Unsuitable for retention
-  Root protection areas (RPAs)

Tree protection measures:

-  No dig area
-  Construction exclusion zone and tree protection fencing

Site:
Underwood
The Hill
Millom
LA18 5EZ

Clients:
Mr and Mrs Slack

Date: April 2024

Scale: 1:250 at A2

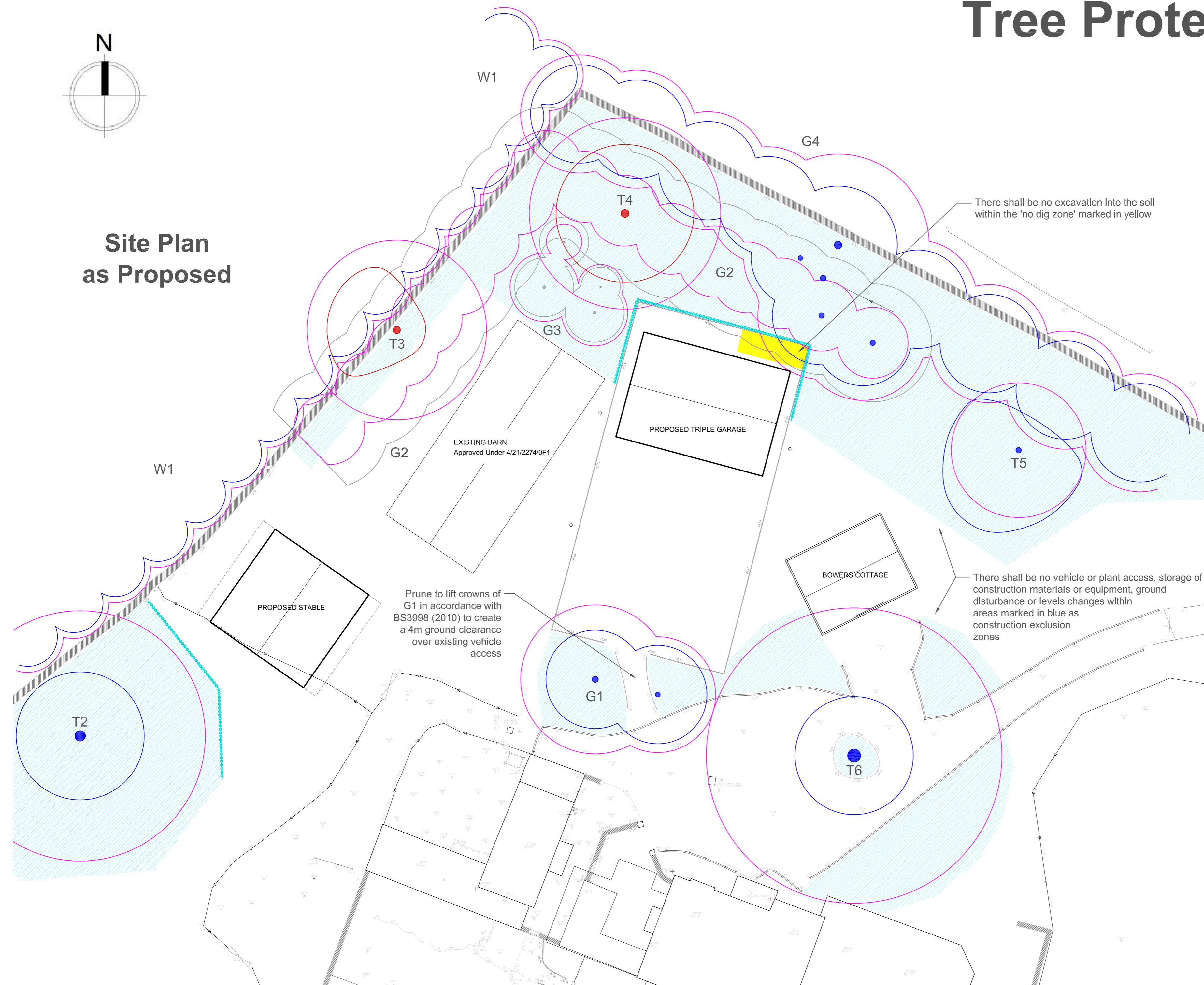
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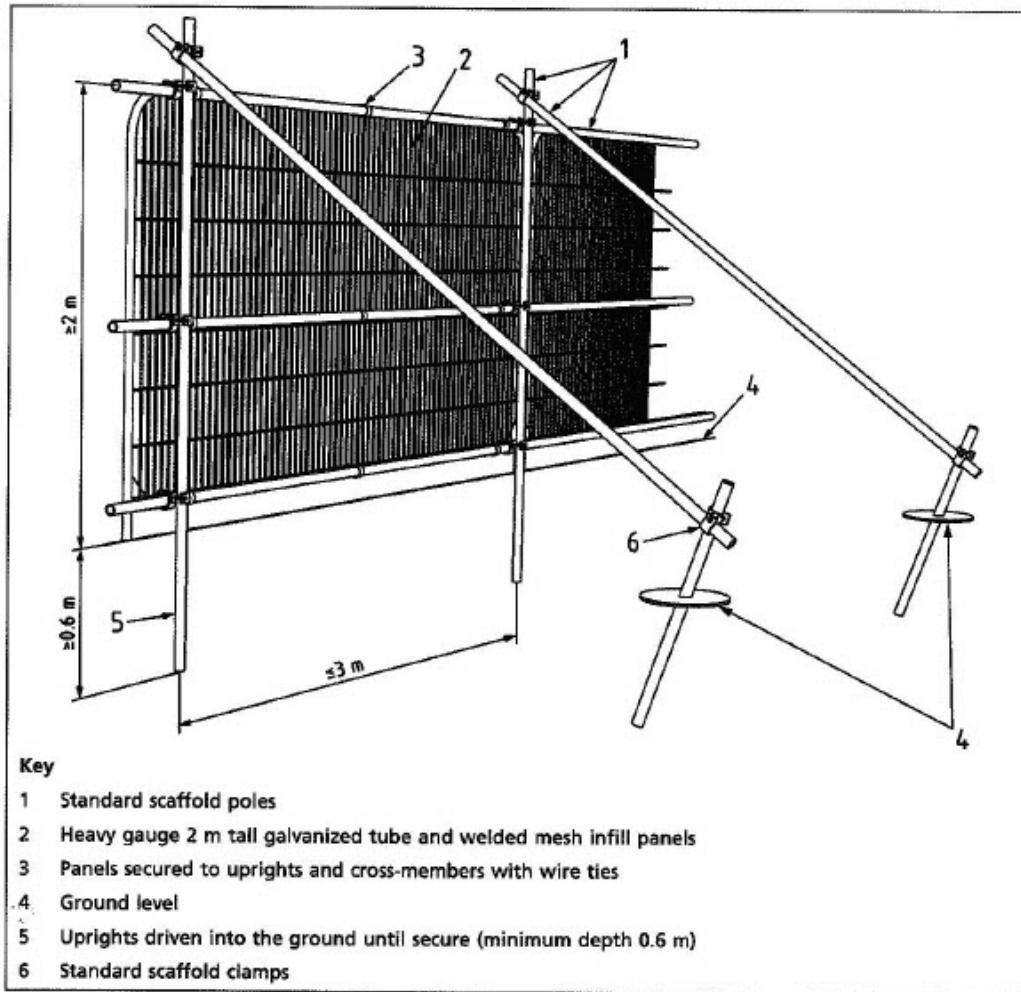


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BS5837 Tree Protection Fencing



Reproduced from *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*, BSI Standards Institution 2012.

TREE PROTECTION AREA KEEP OUT!

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE SUBJECTS OF A TREE PRESERVATION ORDER (TOWN & COUNTRY PLANNING ACT 1990)

CONTRAVENTION OF TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

THE FOLLOWING **MUST** BE OBSERVED BY ALL PERSONS:-

- THE PROTECTIVE FENCING MUST NOT BE REMOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Tree protection fencing shall be installed as shown in the specification on the left and shall be labelled at regular intervals with all-weather notices, such as that shown above, stating "TREE PROTECTION AREA - KEEP OUT!"

BS5837 Tree Survey Schedule

The trees surveyed have been assigned one of the following categories, in line with the guidance outlined in British Standard 5837 (2012)

Trees in relation to design, demolition and construction - Recommendations: -

A

Trees of **high quality** with an estimated remaining life expectancy of at least 40 years

B

Trees of **moderate quality** with an estimated remaining life expectancy of at least 20 years

C

Trees of **low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm

U

Unsuitable for retention

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

Key to tree survey schedule: -

T	Tree	Age is classed as either: young; semi-mature, early-mature, mature or post-mature
G	Group	
W	Woodland	
H	Hedge	
RPA	Root protection area	The radial RPA is calculated as twelve times the stem diameter and represents the area where protection of the tree roots during development works is essential to the tree's future health and survival Where the RPA is not shown as circular on the tree survey plan, it may have been modified to take account of built structures such as buildings, roads or retaining walls
#	Estimated values	Measurements may have been estimated where the tree is inaccessible, such as if it is located on neighbouring land or if the stem is heavily covered in ivy Where trees have multiple stems, an average stem diameter may be given
≤ ≥ ≈		For groups of trees and hedges, measurements for the largest individual will be given or average measurements may be given where the individuals are approximately uniform

BS5837 Tree survey schedule

Site Underwood, The Hill, Millom, LA18 5EZ

Surveyor Jennie Keighley PhD MSc MArborA

Survey date 30 October 2023

Clients Mr and Mrs Slack

Conditions Intermittent light rain, light breeze

Job no. LTC237

ID no.	Species	Stem diameter (mm)	Age	Height (m)#	Crown spread (m)	Crown clearance (m)	Structural condition	Life expectancy (years)	Radial RPA (m)	BS5837 category	General observations
	Latin name						Physiological condition				

T1	Horse chestnut	1170 890	Post-mature	18	N 5.5 E 10 S 7.5 W 3.5	1.5	Poor	<10	15	U	<ul style="list-style-type: none"> • Bifurcates at base • Dominant eastern stem then bifurcates at a height of 2m • Visible decay with black rhizomorphs from base to a height in excess of 3m indicates that western stem is extensively colonised with honey fungus (white rot decay species <i>Armillaria mellea</i>) • Stem lesions indicate tree is also infected with horse chestnut bleeding canker (bacterium <i>Pseudomonas syringae</i> pathovar <i>aesculi</i>) • Twig distortions through majority of crown indicate a significant reduction in vitality • Crown heavily weighted to east • Tree evidently producing fresh branch growth on western side in an attempt to balance its crown • Significant adaptive growth to eastern leader • Two secondary branch failures in lower crown of western leader • Structural integrity projected to be severely compromised as a result of decay associated with honey fungus infection, presenting a risk of stem tear-out, full stem or rootplate failure (dependent on extent of decay internally) • Advise to remove tree due to risk of failure, which would likely be eastwards, towards the house
	<i>Aesculus hippocastanum</i>						Moderate				

BS5837 Tree survey schedule

Site Underwood, The Hill, Millom, LA18 5EZ

Surveyor Jennie Keighley PhD MSc MArborA

Survey date 30 October 2023

Clients Mr and Mrs Slack

Conditions Intermittent light rain, light breeze

Job no. LTC237

ID no.	Species Latin name	Stem diameter (mm)	Age	Height (m)#	Crown spread (m)	Crown clearance (m)	Structural condition Physiological condition	Life expectancy (years)	Radial RPA (m)	BS5837 category	General observations
T2	Sessile oak <i>Quercus petraea</i>	750 750	Mature	17	N 6.5 E 6.5 S 6.5 W 6.5	1.75	Moderate	20+	12.7	B	<ul style="list-style-type: none"> Dying back from upper crown Bifurcates near base into codominant stems Significant basal flare and sounding with a nylon mallet are suggestive of a degree of basal decay but no fungal fruiting bodies could be found around base to identify the causative species Monitor for further decline and for the appearance of fungal fruiting bodies around base of tree (oaks may tolerate fungal infection for many years, depending on the species responsible)
T3	Common ash <i>Fraxinus excelsior</i>	760	Mature	> 20	N 3 E 3 S 7 W 7	5	Poor	<10	9.12	U	<ul style="list-style-type: none"> View obscured by Leylandii but tree evidently in an advanced stage of terminal infection with ash dieback disease (fungal pathogen <i>Hymenoscyphus fraxineus</i>)
T4	Common ash <i>Fraxinus excelsior</i>	810	Mature	18	N 7 E 7 S 7 W 7	4	Poor	<10	9.72	U	<ul style="list-style-type: none"> View obscured by Leylandii but tree evidently in an advanced stage of terminal infection with ash dieback disease Ground disturbance evident within RPA

BS5837 Tree survey schedule

Site Underwood, The Hill, Millom, LA18 5EZ

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Survey date 30 October 2023

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Conditions Intermittent light rain, light breeze

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ID no.	Species Latin name	Stem diameter (mm)	Age	Height (m)#	Crown spread (m)	Crown clearance (m)	Structural condition Physiological condition	Life expectancy (years)	Radial RPA (m)	BS5837 category	General observations
T5	Sessile oak <i>Quercus petraea</i>	570	Mature	15	N 3.5 E 7 S 9 W 7	2	Good Good	40+	6.84	B	<ul style="list-style-type: none"> Ivy cover growing to upper crown has been cut and has died back Crown fully weighted south, into site
T6	European beech <i>Fagus sylvatica</i>	1330	Post-mature	16	N 6 E 6 S 6 W 6	4	Moderate/ Good Moderate/ Good	10+	15	B	<ul style="list-style-type: none"> Feature tree growing on island in driveway Dying back from upper crown No fungal fruiting bodies found to identify cause of tree's decline Crown repeatedly lifted in the past; wounds unoccluded to fully occluded
G1	2no. European beech <i>Fagus sylvatica</i>	≤ 630	Early-mature	≤ 14	N 5 E 5 S 5 W 5	≥ 1	Good Good	40+	≤ 7.56	B	<ul style="list-style-type: none"> Pair of trees growing at either side of access to old tennis court No significant visible defects

BS5837 Tree survey schedule

Site Underwood, The Hill, Millom, LA18 5EZ **Surveyor** Jennie Keighley PhD MSc MArborA **Survey date** 30 October 2023
Clients Mr and Mrs Slack **Conditions** Intermittent light rain, light breeze **Job no.** LTC237

ID no.	Species Latin name	Stem diameter (mm)	Age	Height (m)#	Crown spread (m)	Crown clearance (m)	Structural condition Physiological condition	Life expectancy (years)	Radial RPA (m)	BS5837 category	General observations
G2	Leyland cypress <i>Cupressus x leylandii</i>	≈ 300	Mature	≤ 14	N 6 E 6 S 6 W 6	≥ 1.75	Good Good	10+	3.6	C	<ul style="list-style-type: none"> Closely spaced linear group lining north and west of site Crowns lifted
G3	4no. Scots pine <i>Pinus sylvestris</i>	≤ 290	Semi-mature	≤ 12	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	≥ 1.75	Good Moderate/ Good	10+	≤ 3.48	C	<ul style="list-style-type: none"> Cluster of trees Ground disturbance and soil compaction evident throughout majority of RPAs
G4	Scots pine Horse chestnut Sessile oak European beech Sycamore <i>Pinus sylvestris</i> <i>Aesculus hippocastanum</i> <i>Quercus petraea</i> <i>Fagus sylvatica</i> <i>Acer pseudoplatanus</i>	≤ 770	Young to mature	≤ 20+	N ≤ 6 E ≤ 6 S ≤ 6 W ≤ 6	≥ 0	Poor to Good Dead to Good	40+	≤ 9.24	B	<ul style="list-style-type: none"> Shelterbelt screening site from neighbouring quarry access road Continues south-east, along access Some of trees tagged Understorey of hazel, holly and elder

BS5837 Tree survey schedule

Site Underwood, The Hill, Millom, LA18 5EZ

Surveyor Jennie Keighley PhD MSc MArborA

Survey date 30 October 2023

Clients Mr and Mrs Slack

Conditions Intermittent light rain, light breeze

Job no. LTC237

ID no.	Species	Stem diameter (mm)	Age	Height (m)#	Crown spread (m)	Crown clearance (m)	Structural condition	Life expectancy (years)	Radial RPA (m)	BS5837 category	General observations
	Latin name						Physiological condition				
W1	Sitka spruce	≈ 300	Early-mature	≤ 20	N 3	≥ 2	Good	40+	3.6	B	<ul style="list-style-type: none"> • Located on neighbouring land and therefore not accessed to inspect in detail • Timber plantation with occasional other deciduous trees within
	<i>Picea sitchensis</i>				E 3 S 3 W 3		Good				