Arc Ecology

LAND AT PRIMROSE LANE, GLOSSOP - PROTECTED SPECIES APPRAISAL AND TREE SURVEY

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INTRODUCTION

Arc Ecology were commissioned to undertake a Protected Species Appraisal and Tree Survey of an area of land at Birds Nest Cottage, Primrose Lane, Glossop, High Peak to attempt to determine the presence/absence of any protected or notable flora and fauna species within the site and to identify the tree species present and calculate the Root Protection Areas (RPA's) prior to a planning application being submitted for the development of the site.

Given the habitats present within the site, particular emphasis was given to the potential for the site to support roosting bats and nesting birds.

SITE DESCRIPTION

The site lies approximately 1km to the west of the centre of the town of Glossop, High Peak at OSGR SK 024 939 (approximate site centre) and consists of an area of amenity land associated with an existing dwelling property run as a bed and breakfast (see Photographs 1 - 4).

The site is primarily well-managed lawn with small amounts of plantain (*Plantago lanceolata*) and daisy (*Bellis perennis*) present.

There are a number of beds around the edges of the northern and southern borders of the lawn area containing planted non-native flower and shrub species.

There are trees present on the northern, eastern and southern borders of the site and within the grassed area in the western section of the site. A number of the trees on the eastern and southern boundary are in adjacent land. Species present include ash (*Fraxinus excelsior*), cherry (*Prunus sp*), beech (*Fagus sylvatica*), oak (*Quercus robur*), sycamore (*Acer pseudoplatanus*), holly (*Ilex aquifolium*) and silver birch (*Betula pendula*).

Longclough Brook runs along the northern boundary of the site beyond a slabbed path.

Habitats in the vicinity of the site consist of built environment with its associated amenity land to the north, south and west and a disused area of land containing trees and scrub to the east.

Photograph 1 - View to north of site

Photograph 2 - View to east of site

Photograph 3 - View to south of site

Photograph 4 - View to west of site

METHODOLOGY

The site survey was undertaken on the 4th November 2016 by an appropriately experienced ecologist and holder of a current Level II Licence to survey for bats.

BATS

An inspection of all trees within the site for signs of any suitable features to be used by roosting bats was carried out to attempt to determine presence/absence of such species within the site. Any evidence of the presence of bats such as droppings, staining or scratching on wood or features such as cracks, crevices, rot holes and dense ivy covering was noted.

The survey was carried out in accordance with current guidelines given by Mitchell-Jones (2004) and the Bat Conservation Trust (2016).

NESTING BIRDS

The appraisal for nesting birds was undertaken following guidelines given in Bibby *et al.* (2000) and consisted of inspection of the buildings for evidence of current or historic nesting.

TREES

The trees within the site were assessed according to guidance given by the British Standards Institution (2012).

DEVELOPMENT PROPOSALS

The proposed development of the site is the construction of a log cabin to be used as a holiday let. The construction will be undertaken *in situ* with all digging to be done by hand. Utility cables will be buried under the land to the west of the site and will then run under an existing bridge over Longclough Brook to the existing property.

CONSTRAINTS

There were no constraints to the survey and all areas of the site were accessible.

SURVEY RESULTS

BATS

There were no features noted on any of the trees within the site that could provide suitable roosting areas for bats with the exception of the large ash in the northern section of the site which had some rot holes in the end of some of the higher branches, although it was not possible to access these areas to determine whether they were deep enough to provide shelter for bats.

NESTING BIRDS

There was no current or historic evidence of the presence of nesting birds found within any of the trees or shrubs within the site, although these features offer suitable nesting sites for bird species.

TREES

A total of twelve individual trees were recorded during the survey (see Figure 1 and Appendix A for details).

OTHER PROTECTED AND NOTABLE FLORA AND FAUNA SPECIES

There was no evidence of the presence of any other protected or notable flora and fauna species found, and no habitats within the working area considered suitable to support such species.

CONSTRAINTS AND RECOMMENDATIONS

BATS

Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended by the CRoW Act 2000), and by the Habitats Regulations 1994 (as amended 2007). In summary, these make it an offence to damage, destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take any bat.

In addition, seven bat species are on the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions of the NERC Act 2006. The National Planning Policy Network document 'ODPM Circular 06/2005' gives guidance on the treatment of Species of Principal Importance and states that local authorities should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations.

Features potentially suitable for roosting bats were noted on one tree within the site, but the proposed works will not affect this tree and disturbance within the vicinity of the tree is likely to be negligible.

Due to this, bats are not considered to pose a constraint to the proposed development of the site, and no further survey for bats with regard is considered necessary.

The risk of any bats being disturbed during any work works is considered to be negligible.

There is potential to enhance the site for bats by including external bat-boxes on the log cabin to be constructed. A range of such boxes can be found at www.wildcareshop.com.

NESTING BIRDS

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

A number of bird species are also listed as Species of Principal Importance under the provisions of the NERC Act 2006. The National Planning Policy Network document 'ODPM Circular 06/2005' gives guidance on the treatment of Species of Principal Importance and states that local authorities should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations.

There was no current or historic evidence of the presence of nesting birds found within the trees and shrubs in the site at the time of survey, but these features provide suitable habitat for nesting birds and could be used at any time during the nesting season.

Due to this, if possible, any scrub or tree removal required should ideally avoid the nesting season for birds (February to September inclusive).

If this is not possible, then an appropriately experienced ecologist should conduct an investigation of the areas to be affected to determine whether they are in use by nesting birds immediately prior to work commencing. If nesting birds are found to be present at this time, all work likely to cause disturbance should cease until the young have fledged and the nest is no longer in use.

TREES

There is no known Tree Preservation Order (TPO) on the trees within the site and no plans for any trees to be removed as part of the development.

All groundwork is to be through hand digging and due to the construction of the cabin, the requirement for foundations is likely to be lower than for normal developments.

For construction within the RPA of the tree, techniques designed to minimise the damage to the tree roots by construction of the foundations should be employed.

In the case of this development, raft foundations or mini pile foundations are likely to be the most appropriate methods to use, as stated in the extract from Section 7 of BS5837:2012 below.

Special engineering for foundations within the RPA

The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer. In shrinkable soils, the foundation design should take account of the risk of indirect damage.

Root damage can be minimized by using:

- piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm;

- beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

Where a slab for a minor structure (e.g. shed base) is to be formed within the RPA, it should bear on existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should also be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take account of any effect on the load-bearing properties of underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from the building control authority prior to this approach being relied on.

Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the accepted parameters for temporary ground protection. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored pile or screw pile.

The best of these methods to use should be decided upon in consultation with an engineer with appropriate experience in the use of these methods.

Construction of hard-standing areas within tree root zones

With reference to BS 5837:2012, where the construction of permanent hard surface within the root area of trees is required, ideally a non-dig design should be used to avoid root loss or damage caused by excavation.

The construction area should be levelled by filling hollows and removing protrusions and hard landscaping. No soil excavation, other than the removal of the turf layer should be carried out during this process and any filling material used should be porous to allow water and oxygen to reach the soil.

If any roots are to be pruned, sharp cutting tools should be used to ensure that damage to the root system is minimized. No roots, greater than 25mm in diameter should be pruned where possible.

A geo-textile membrane should be laid over the whole surface, including any retained hard surfaces and fixed into position with ground pegs.

If edging blocks or stone are to be used to retain the drive surface within the trees root zone, the mix into which they are set should be laid directly onto the geo-textile membrane over the supporting base. No deeper excavations should be made to accommodate the footing of the edging detail.

A geoweb material can then secured over the membrane and an aggregate sub-base material can be laid onto the geoweb. The depth of the sub-base aggregate should be the same depth as the geoweb and no less than 100mm. This aggregate should be a granular no fines material that is typically 20-40mm diameter. This will allow continued passage of oxygen to the root system of the tree. The sub-base material should be compressed to make it ready for final surface treatment.

This surface can also be used as a temporary works access route prior to the laying of the final surface.

Final surface details for residential purposes should be of a porous nature and should be bedded in using a lean mix that is also highly porous.

Tree Protection Measures

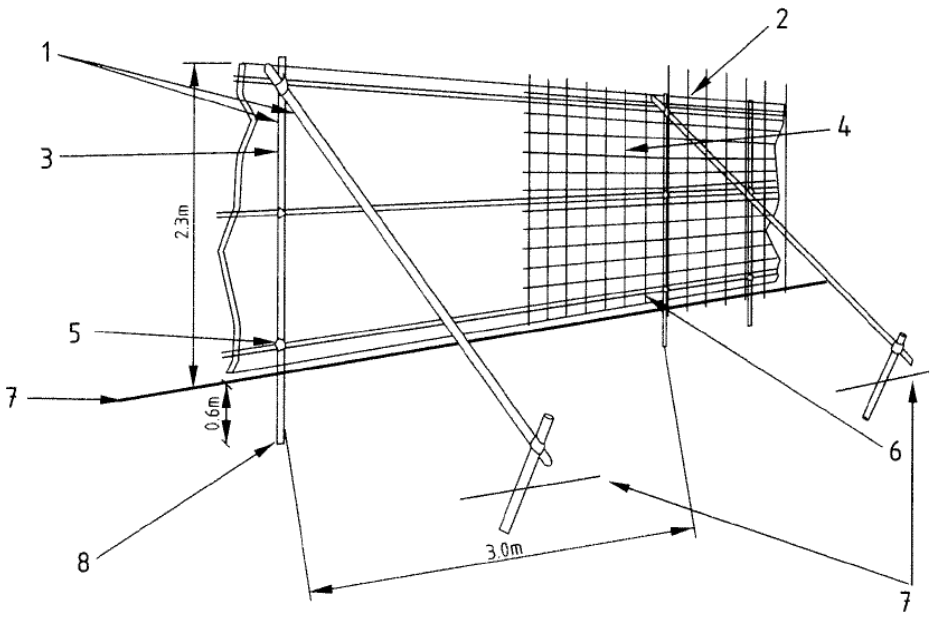
All trees to be retained on site should be adequately protected as set out in BS5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'. This should be informed by the Root Protection Area shown in the Tree Schedule.

All fencing and ground protection should be erected prior to the commencement of work, including the entry of machinery or materials and the demolition of existing buildings. Once in place, these should not be removed or altered without prior recommendation from an arboriculturalist or approval from the local planning authority.

Where there are particularly vulnerable trees close to construction access, an arboriculturalist should be on site to supervise any necessary works and the erection of fencing.

Pre-development tree work should be undertaken before the installation of tree protection where required, with the agreement of the local planning authority. This should be carried out to BS3998 (1989) 'Recommendations for Tree Work' by fully qualified and insured contractors.

Barriers should be fit for the purpose of excluding construction activity and remain rigid and complete. Barriers should consist of a scaffold framework comprising a vertical and horizontal framework as shown below taken from BS5837:2012



1 Standard scaffold poles
2 Uprights to be driven into ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of fencing to avoid easy dismantling
7. Ground level
8. Approx. 0.6m driven into ground

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Once tree protection is in place, notices should be placed on fencing to indicate that no operations are permitted in these areas. Tall and wide loads should not come into contact with retained trees. The movement of vehicles, jibs and booms should be supervised by a banksman.

There should be no changes in ground level including the grading or scraping of topsoil adjacent to retained trees.

There should be no construction of hard surfaces, mechanical or hand digging without the consent from the local planning authority.

There should be no activity causing localised water-logging adjacent to trees.

Oil, bitumen, cement and other materials that may be injurious to trees should not be stored or discharged within 10m of the tree stem ensuring that sloping ground is taken into consideration.

Fires should not be lit where flames may extend to within 5m of tree foliage, branches or trunk depending on the size of fire and wind direction.

Notice boards, cables or other services should not be attached to any part of the tree.

SUMMARY

- A Protected Species Appraisal and Tree Survey were carried out on an area of land at Primrose Lane, Glossop Arc Ecology on the 4th November 2016.
- No evidence of the presence of bats was found within the site and there were limited features found on any of the trees present that would be suitable for roosting or resting bats.
- Bats are not currently considered to pose a constraint to the proposals and no further survey for bats is required.
- There was no evidence of the current or historic presence of nesting birds within any of the trees and shrubs within the site, but there are suitable features present for nesting birds.
- Due to this, any tree or scrub removal required should ideally avoid the nesting season for birds (February to September inclusive).
- If this is not possible, then the site should be checked by an appropriately experienced ecologist immediately prior to work commencing to determine whether nesting birds are present.
- If nesting birds are found to be present at this time, all work likely to cause disturbance should cease until the young have fledged and the nest is no longer in use.
- Twelve individual trees and were assessed during the survey.
- There is currently no known TPO on the site and no there are no plans to remove or undertake remedial work on any of the trees within the site.
- Where trees are to be retained, then during the design and construction phases, appropriate techniques should be used to minimise risk of damage to the trees root areas.

REFERENCES

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Bat Surveys for Professional Ecologists - Good Practice Guidelines (3rd Edition). Bat Conservation Trust, London.

Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S.H. (2000).
Bird Census Techniques (2nd Edition). Academic Press, London.

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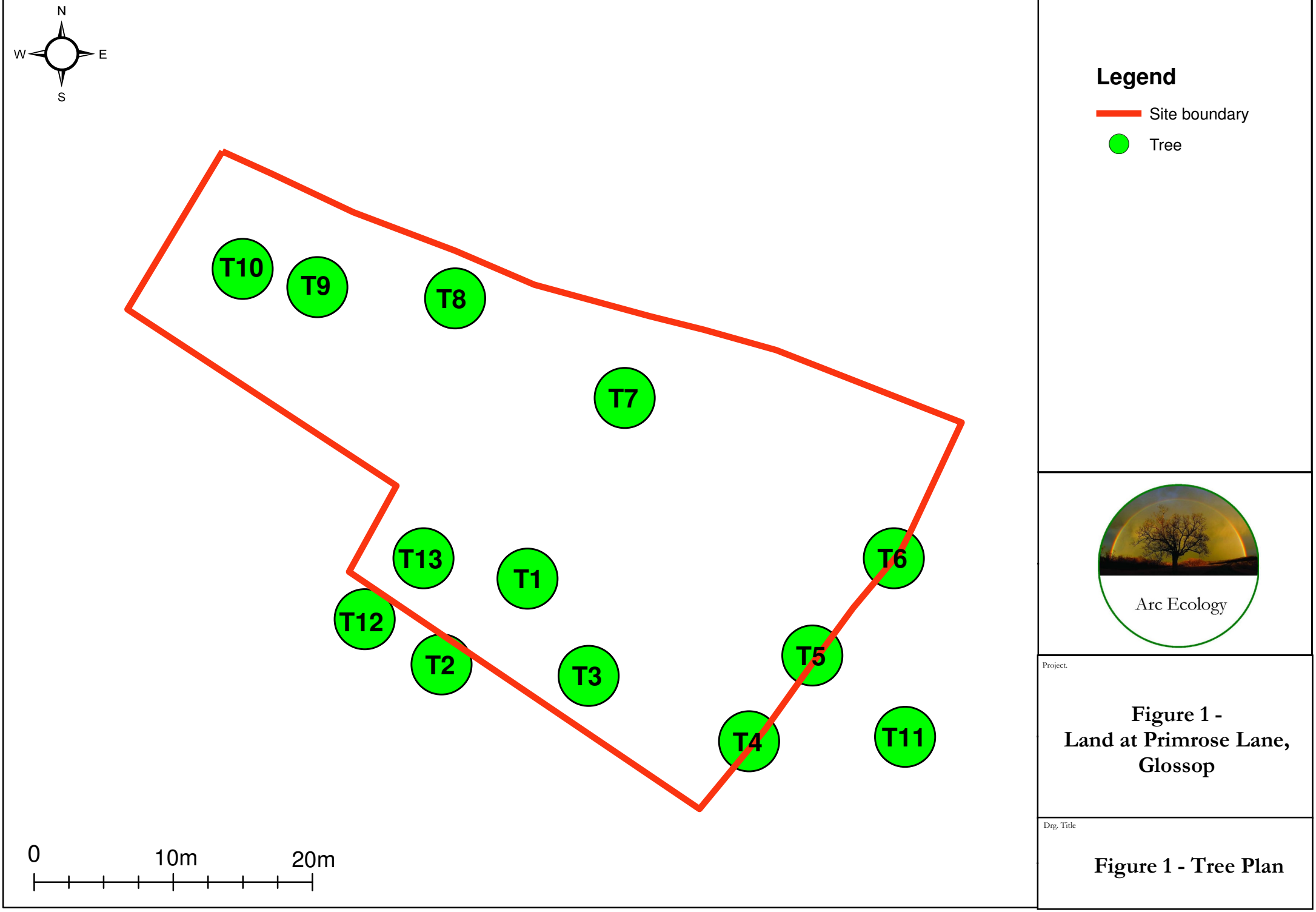
Bat Mitigation Guidelines. English Nature, Peterborough.

FIGURE 1 TREE PLAN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T6
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T4
T11
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10m
20m
Legend
Site boundary
Tree
Arc Ecology
Project.
Figure 1 -
Land at Primrose Lane,
Glossop
Drg. Title
Figure 1 - Tree Plan

APPENDIX A - BS5837:2012 TREE SCHEDULE

BS5837:2012 TREE SCHEDULE

Tree N°	Species	Height (m)	Stem Diameter @ 1.5m (mm)	Branch Spread Radius (m) N/E/S/W	Age Class	Category Grading	Root Protection Area (m2)	Nominal radius (m)	Structural Condition/Notes
1	Beech	10	200, 180, 200	5, 6, 6, 6	M		150	6.9	
2	Cherry	10	330	4, 4, 4, 4	Ma		48	3.9	On adjoining land
3	Ash	12	650	7, 7, 5, 4	Ma		191	7.8	Some lower branches removed in past
4	Silver birch	10	270	4, 4, 4, 3	M		34	3.3	
5	Silver birch	7	160	3, 1, 3, 4	M		10	1.8	
6	Oak	7	130	3, 0, 3, 3	Y		7	1.5	
7	Ash	12	830	7, 9, 7, 8	Ma		308	9.9	Some branches removed in past, rot in ends of some branches and on
8	Holly	4	210	3, 3, 3, 3	Y		19	2.5	
9	Hawthorn	4	200, 100, 200, 210, 150	5, 3, 4, 3	Ma		327	10.2	Topped in past. One limb dead with missing bark and insect holes
10	Beech	6	290	6, 5, 5, 4	Ma		41	3.6	
11	Sycamore	12	650, 300	6, 8, 8, 7	Ma		408	11.4	Size estimate, on adjoining land and no access
12	Beech	7	190, 130	4, 4, 4, 5	M		48	3.9	
13	Ash	10	440	6, 3, 5, 6	Ma		92	5.4	On adjoining land

KEY:

Age Class

NP Newly planted

Y Young (<1/3 life expectancy)

M Middle (1/3-2/3 life expectancy)

MA Mature (2/3 life expectancy)

OM Over-mature (In decline)

VET Veteran

BS Category Grading (life expectancy in years)

R Trees for removal (<10)

A High quality trees (>40)

B Moderate quality trees (>20)

C Low quality trees (>10 / <150mm at 1.5m)

BS Sub-category Grading

1 Individual trees with arboricultural value

2 Groups or woodlands with landscape value

3 Trees with historic, conservation or cultural value

Root Protection Area Equation

$$RPA = \frac{(\text{Stem Diameter} \times 12^{*})^{2} \times 3.142}{1000}$$

* x 10 for multi-stemmed trees measured above root flare.