

# Arboricultural Impact Assessment



**Land at Burnhouse Farm, Back Lane, Slaidburn BB7 3EE**

Report by D. Slater PhD

## 1. Executive summary

- 1.1 A survey of land at Burnhouse Farm, proposed for the development of four camping lodges, was carried out in January 2025.
- 1.2 The development proposal will require the removal of three early-mature Sitka spruce trees and approximately ten younger self-set trees including small specimens of birch, elderberry, hawthorn, oak and willow. One mature Scots pine (T3) will also need to be removed. Another mature Scots pines (*Pinus sylvestris*) and the mixed shelterbelt on the western edge of the plot of land are considered valuable arboricultural features and will be preserved within the development scheme. Protective fencing works should be carried out to protect their root zones prior to any onsite development.
- 1.3 The area for mitigating planting identified in the proposed development plans is considered suitable for that purpose. Given existing and extensive damage to young oak trees by grey squirrels within the planted area, the planting mix for the mitigating planting should contain a proportion of native wild cherry (*Prunus avium*) which cannot be damaged by being debarked by squirrels. Alternatively, or in conjunction, control of grey squirrel will need to be regularly applied.
- 1.4 Ground conditions are wet, with substantial vulnerability to soil compaction and consequential hydrological changes if the site is mismanaged. Minimum dig techniques and careful water management will be needed to achieve sustainable development on this site.
- 1.5 Overall, the arboricultural impact is considered low, given the quality and quantity of the tree stock present, the proposed preservation of the majority of trees of higher value within the scheme and considering the additional mitigating planting associated with this development proposal.



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## **2. Caveats & Limitations**

- 2.1 This report is written based on a survey of the land carried out by the report's author in January 2025.
- 2.2 The report will provide a 'normative' view of the arboricultural assets present, their value and their likely development over time. It cannot fully take into account unlikely and unpredictable outcomes that can sometimes occur in the natural environment, such as newly arrived pests and diseases or extreme weather events in future years.
- 2.3 Please note the methods and equipment used for the survey reported here: where specific equipment or techniques have been used, sources that justify their use will be cited.
- 2.4 This report's author has worked and taught about assessing trees for over 25 years and is a chartered forester. Despite this level of education and experience, there can be oversights made with regard to some factors, particularly where information is lacking on site history or local conditions. All efforts have been made to come to a suitable recommendation on this development proposal, using the evidence provided and data collected through the site survey.



### 3. Background

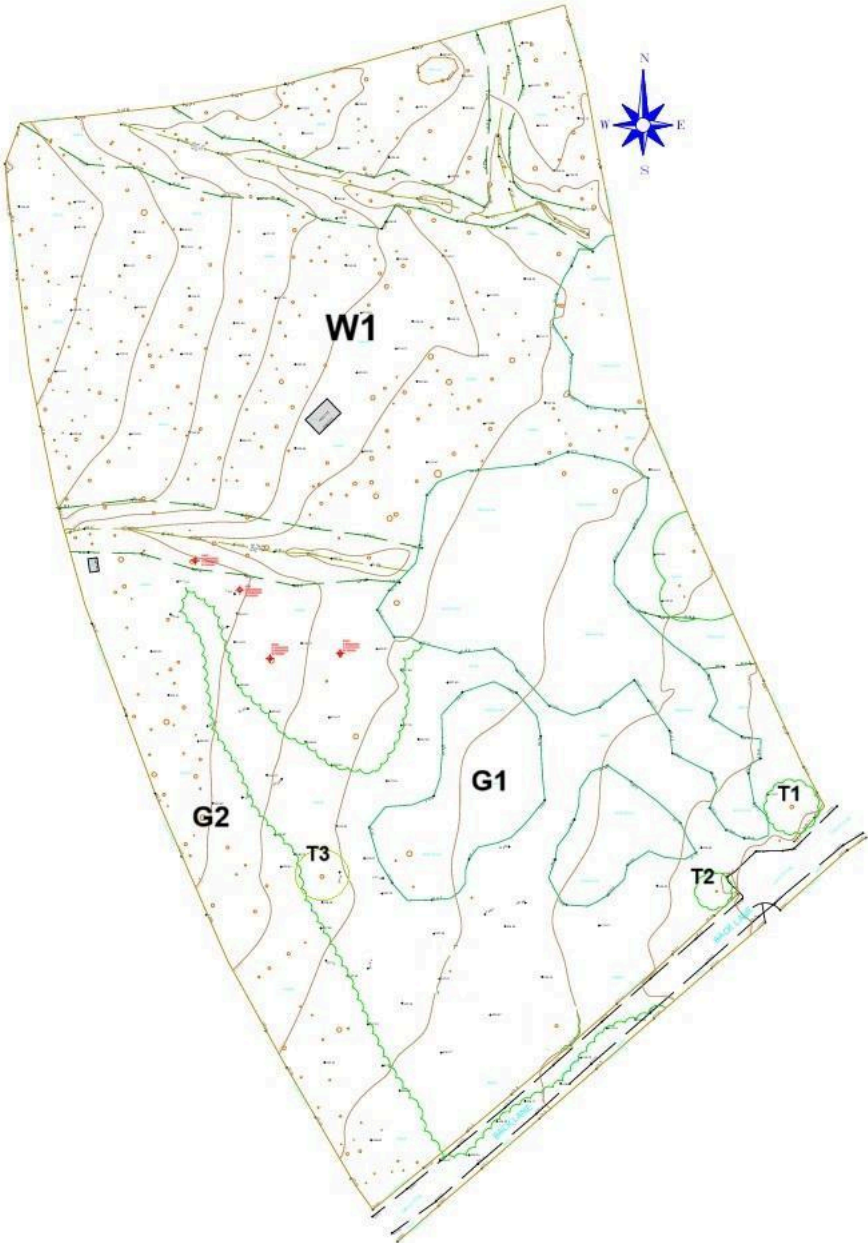
- 3.1 A survey of this site, north and east of Burnhouse Farm, Back Lane, Slaidburn, was requested to assess a proposed development of four camping huts with associated roadways and parking in relation to this proposal's potential impact on extant trees. Mitigating planting is offered as part of the proposed development, to the west of the land to be developed and within the land itself.
- 3.2 The survey involved a visual check on all relevant trees and tree groups, assessment of understory and herb layer within the plantation, and observations of ground conditions and the proposed access point. No invasive testing was carried out on any trees.
- 3.3 The site is a mixed plantation, mostly of Scots pine (*Pinus sylvestris*), Sitka spruce (*Picea sitchensis*), beech (*Fagus sylvatica*) and sycamore (*Acer pseudoplatanus*) with low numbers of other species, including rowan (*Sorbus aucuparia*), oak (*Quercus robur*), alder (*Alnus glutinosa*), hawthorn (*Crataegus monogyna*), willow (*Salix cinerea*), aspen (*Populus tremula*), hazel (*Corylus avellana*) and elderberry (*Sambucus nigra*). This plot of land is thus an artificial plantation dating back several decades with some self-seeded and naturalizing species in small numbers.
- 3.4 Although steeply sloping, the ground conditions are wet, with the presence of rushes in places. Other ground flora includes minor coverings of brambles and common species of ferns. Due to the timing of the survey, a more developed list of ground covering herbs could not be collated – but the previous history of a dense plantation with heavy shading and coniferous species in the majority, as well as ground conditions and location, suggest that ground flora biodiversity is currently at a low level on this site.
- 3.5 It is understood that the trees are not currently protected under a TPO, nor does the land lie within a conservation area. This mixed plantation is relatively modern (planted in the 20<sup>th</sup> Century) and not part or related to any area of ancient woodland.



#### 4. Site Information

- 4.1 The land proposed for this development is a small mixed plantation (approximately 0.92 hectares in size) on the hillside to the northeast and adjacent to Burnhouse Farm. This plantation is remote from other properties in a rural area dominated by large fields and small pockets of tree cover, mostly associated with farm holdings.
- 4.2 Recent works on this land have been the removal of some pine and other trees in the southern section of the plantation, with recent replanting (2023-2024) of mostly native trees in 60-centimetre-tall tree shelters.
- 4.3 Figure 1 provides a map identifying individual trees of note, groups of trees within or adjacent to the proposed development, as well as the remaining woodland to the north of the site.





**Figure 1:** Map identifying single trees, tree groups and woodland on the land subject to a proposed development of four camping huts at Burnhouse Farm, Slaidburn. Group G1 covers all southern areas of this plantation outside of G2 and the three individual trees (T1 – T3) identified.



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4.4 Table 1 provides data on the individual trees, groups and woodland identified in Figure 1.

**Table 1:** Data on individual trees, groups of trees, and woodland within the land proposed for development at Backhouse Farm, Slaidburn.

ID	Species	DBH (cm)	Height (m)	Condition	Recommended works/notes	BS5837 Code
T1	Scots pine <i>Pinus sylvestris</i>	31	14	Fair	None	B
T2	Common alder <i>Alnus glutinosa</i>	8	4	Good	Young tree, potential for screening value	C
T3	Scots pine <i>Pinus sylvestris</i>	47	14	Good	None	B
G1	Mixed species including Sitka spruce, oak, willow, aspen, birch, hazel, hawthorn and elderberry	Sitka 38-48 Others 3 - 22	Sitka 14 Others 2- 6	Sitka – Good Others Fair to poor	Partial removal of this group will be required to facilitate the proposed development  Crown lift one Sitka to be retained within the scheme.  Enact squirrel control due to damage present on young oaks.	B-C
G2	Shelterbelt of beech, pine & sycamore	22-45	14-16	Fair to Good	Minor thinning works to remove trees of poor structure and favour other trees in this shelterbelt.	B
W1	Mixed woodland, mostly of Sitka spruce and Scots pine with	22-45	14-16	Fair to Good	Occasional thinning may encourage the production of better trees and improve ground flora.	B



	some sycamore and beech					
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- 4.5 The shelterbelt (G2) is an important edge feature that would act to separate a field with extant camping huts from these four newly proposed camping huts and provides a wind break and screening that is highly desirable to retain as part of the site's landscape character and functionality. It is important that the continuity of group G2 is not disrupted by the proposed development for those reasons.
- 4.6 The proposed development would not ingress into the northern part of this plantation (W1), leaving this intact and with potential for biodiversity enhancements through thinning, replanting and other woodland management techniques.
- 4.7 Several of the young oak trees in group G1 exhibit severe squirrel damage to their stems. Some will be retained within the proposals, as they lie on the eastern edge of group G1, but they may suffer from stem failure or stem death due to the extent of the debarking (Fig. 2). Mitigating planting should consider the planting of species that are less vulnerable to squirrel damage – and/or the owner should consider the merits of applying squirrel control to lessen the damage being caused to trees that would otherwise be valuable in the future.



**Figure 2:** Severe bark stripping to young oak in group G1 caused by squirrels. Author's own image, January 2025.



- 4.8 The following images show the trees and groups relevant to this development proposal (Figures 3-6).



**Figure 3:** Scots pine (T1) situated in the southeastern corner of the plot. This tree has been rated 'B' under the BS5837 schema, meaning it is a tree desirable to retain within the proposed development.





**Figure 4:** View across the lower part of group G1 showing self-seeded sycamore, elderberry and hawthorn, with larger Sitka spruce in the northern section of this group.



**Figure 5:** Internal view, facing west, of the shelterbelt G2, which separates this plantation from the adjacent field, already hosting some camping huts. This is a valuable screening and sheltering feature to retain, categorized as 'B' under the BS5837 schema.





**Figure 6:** This image shows Scots pine T3 – categorized as a ‘B’ tree under the BS5837 schema. The design scheme requires the removal of this tree but the retention of the adjacent shelterbelt.

- 4.9 Damage to roots of trees to be retained needs to be minimized if the development proposal is to be enacted. Protective tree fencing, as set out in British Standard 5837 (2012) should be implemented after initial tree clearing works and before any construction works. Protective fencing should remain in place throughout the development process and no materials or tools should be stored past the fence line, nor vehicular access allowed, to prevent root damage, soil compaction and soil contamination. A protective fencing plan is supplied in Appendix One.
- 4.10 Where the protective fencing cannot protect the entirety of a tree’s root protection area (RPA), then no-dig or minimal dig options need to be undertaken for constructions of foundations, parking areas or roadways. For the sake of native soil preservation and avoiding adverse effects to site hydrology, no-dig or minimal dig options would be preferable for the entire construction scheme.



## 5. Development Proposal

- 5.1 The development proposal involves using the existing entrance on the southern boundary of this plantation to create a short set of roadways to four car parking areas associated with four camping huts, all to be built within the former plantation.
- 5.2 This proposal will require the removal of some trees and saplings in the interior of the plantation, all situated within group G1. There is scope for retaining some of the northern part of this group, particularly if some larger trees were crown lifted to 4.5 metres. This pruning work should be undertaken as set out in British Standard 3998 (BSI, 2010).
- 5.3 Due to the vulnerability of the site from soil compaction and root damage, the foundations of the camping huts, the car parking areas and the roadway should be undertaken with a 'minimum' dig approach. This approach would avoid any substantial damage to the roots of trees to be retained within the development and would also avoid deep soil compaction or obstructions that would adversely affect the site's hydrology.



## 6. Arboricultural Impact Assessment

- 6.1 The proposed development will require the removal of three maturing Sitka spruce trees in group G1, the removal of one mature Scots pine (T3) and several young specimens of alder, birch, elderberry, hawthorn, oak, and willow, most of which have self-seeded into this area in recent years. All these removals will be within the plantation, not affecting edge trees, and not removing any high value specimens (category A trees).
- 6.2 As noted above, as most of the young oak trees are compromised by severe squirrel damage to their stems, the removal and replacement of some of these specimens is justifiable as part of the scheme.
- 6.3 High value screening trees at the eastern edge of group G1, all of the trees in group G2 and one notable mature Scots pine tree (T1) are considered desirable to be retained within the development proposal.
- 6.4 Proposed shrub planting should consist of a high proportion of native species, such as native privet (*Ligustrum vulgare*), holly (*Ilex aquifolium*), yew (*Taxus baccata*) and hazel (*Corylus avellana*) that are suited to the soil conditions and shade within this forest compartment.
- 6.5 Overall, the arboricultural impact of this development proposal is considered medium, reduced to low if mitigating planting is undertaken as proposed and subject to avoiding irreparable damage to the site's hydrology and/or damage avoided to the retained mature trees (see Method Statement, Appendix One).



## 7. Impact Mitigation

- 7.1 As the site has a wet upper soil profile (at least in the winter months), it is important to minimize damage to the site's natural hydrology and native soils. This will require a mix of a 'minimal dig' and 'no-dig' approach to the establishment of tracks, foundations and parking areas on this site.
- 7.2 Site drainage should not be enhanced, as upland storage of rainwater can alleviate flooding risk lower in a water catchment. In addition, the trees on the site will be adapted to the current level of water availability in the soil, so any enhancement of land drainage on this site could cause physiological stress to extant trees.
- 7.3 The development proposal will require the removal of T3 (Scots pine) and part of G1 consisting of three early-mature trees (Sitka spruce) and several young specimens of birch, elderberry, hawthorn, oak and willow. Mitigation for these losses is offered by replanting shrubs within the site – also to include significant planting on land directly adjacent and east of the site entrance. This area is currently pasture and is considered suitable for afforestation, although planting in this location must include suppression of the existing grass sward either by mulching newly planted specimens or by the use of a non-residual herbicide.
- 7.4 For planting resilience, a heterogeneous mix of woody plant species should be planted in the mitigating landscaping plan. Due to the overt squirrel damage to young oak specimens in the plot, it is recommended that wild cherry (*Prunus avium*) is included as a significant component in the tree planting to the east of the site, as this species is both native and resistant to squirrel damage. The owners should also consider applying a sustainable form of squirrel control to assist the growth of retained and new trees, as many specimens will be vulnerable to such damage at the pole stage of their growth.
- 7.5 The proposed mitigating planting should serve to provide sufficient screening for the new camping huts as well as reducing the impact of light pollution that can arise from such developments in rural areas.



## 8. Author's Details

The author of this report, Dr. Duncan Slater, is an experienced arboriculturist, having previously worked for three local authorities, advising on planning issues in relation to tree cover.

### Relevant Qualifications

- BSc Forestry
- MSc Resource Management
- MSc Environmental Management
- PhD Plant Sciences

### Relevant Affiliations

- Member of the Institute of Chartered Foresters (MICFor)
- Professional member of the Arboricultural Association (MArborA)

### Current Roles

- Senior lecturer in arboriculture at Myerscough College, Lancashire
- Arbor Day UK Coordinator

### Contact Information

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## 9. References

BSI (1989) *BS4428: 1989 Code of Practice for General Landscape Operations*. London: British Standards Institute.

BSI (2010) *BS3998: 2010 Tree Work – Recommendations*. London: British Standards Institute.

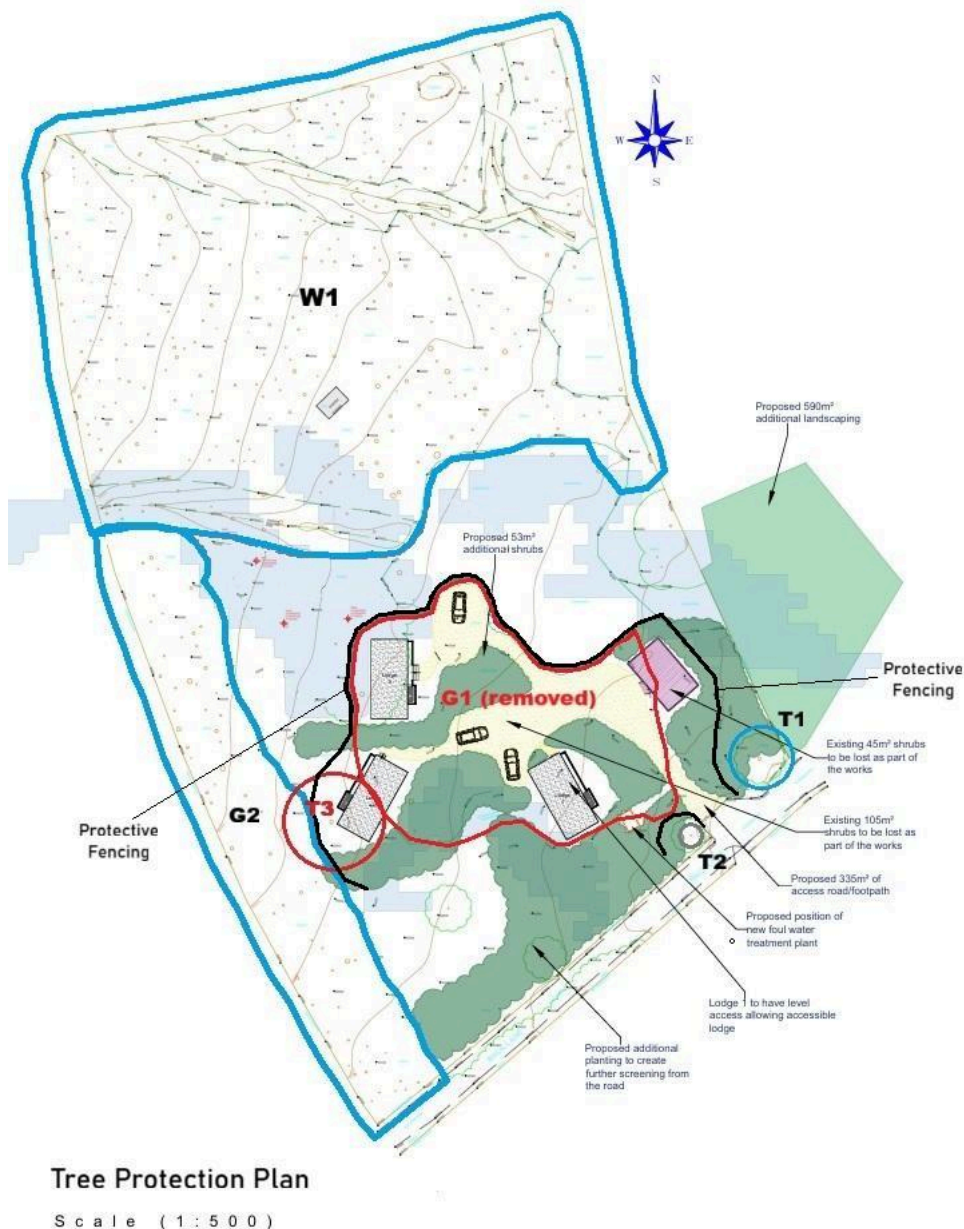
BSI (2012) *BS5837: 2012 Trees in Relation to Design, Demolition and Construction*. London: British Standards Institute.



## **Appendix One: Provisional Method Statement**

- 1.1 Work to remove trees, shrubs and saplings identified as within the footprint of the development should be removed to facilitate easier installation of protective fencing prior to any construction works. Small branch work should be chipped in-situ, if possible.
  
- 1.2 All retained trees should be protected from further damage by the placement of protective fencing, after the necessary tree removal work but before any other work is in place. Fencing should comply with British Standard 5837 (BSI, 2012) in relation to the type and extent of fencing used. Protective fencing should remain in place throughout the development process, with no storage of materials or any vehicular access in the fenced-off areas. A protective fencing plan is provided in Figure 7.





**Figure 7:** Protective fencing plan with a long section protecting the western, northern and eastern parts of the woodland, and a short arc of fencing to protect T2 (solid black lines).

- 1.3 Works should construct roadways first, then parking areas and foundations for the camping huts. Material storage on the site should be minimized, avoiding storage on all open ground areas. There is ample room on adjacent areas to stack building materials on hard standing, rather than allowing storage of materials to cause damage to soil and tree roots within this plantation.
- 1.4 A 'minimal dig' or 'no dig' construction of roads, parking areas and camping hut foundations should be undertaken. An example of this is to carefully level the upper soil surface and then apply a base membrane and stone confinement system (*e.g.*, Cellweb) that allows for less stone to be used to



create a solid base for these features and requires minimal digging for installation (Fig. 7).



**Figure 7:** Application of membrane and stone confinement system to allow for a minimal dig approach to installation of roadways and parking areas. This reduces soil damage, reducing effects on site hydrology, and protects tree roots from severance or crushing. It also requires the use of a lot less stone to form a solid base for these structures. Image courtesy of CellWeb™, 2022.

- 1.5 Work would be better carried out in the summer months, due to the wet nature of this site during the winter months. Late summer work would also avoid disturbance of the site during bird nesting season.
- 1.6 Although there were no obvious signs of bat microhabitat in the trees in the southern section of this plantation, care must be taken not to disturb or destroy bat roosts. Where potential bat roosts are identified, they should be checked for the presence of bats by a professional.
- 1.7 Mitigating planting should be carried out to comply with British Standard 4428 (BSI, 1989). Planting should be at approximately 2-metre centres and sufficient weed control and protection from herbivory in place (e.g., each specimen is mulched and guarded, or each specimen has its base treated with herbicide and is guarded). Planting should be within the recognized planting season (late November to early March of each year), so that newly planted saplings can establish before drier spring and summer weather occurs.

