TREE SOLUTIONS

**Arboricultural Impact Assessment**

**Forest Holidays, Beddgelert**

Prepared for:

**FOREST HOLIDAYS**

Our Ref: 24/AIA/SNPA/23

August 2024

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**Contents:**

## 1.0 INSTRUCTION

1.1 We have been instructed by Forest Holidays (the applicant) to carry out an Arboricultural Impact Assessment (AIA) to assess the development proposal in relation to trees in accordance with the principles of British Standard 5837 'Trees in Relation to Design, Demolition & Construction - Recommendations' 2012.

1.2 We are instructed to prepare a report to provide information to assist all parties involved in the planning process to make balanced judgements regarding arboricultural features in relation to the proposed holiday cabins at Forest Holidays, Beddgelert. As such, all trees within influencing distance to the development proposal both on and adjoining the site have been surveyed and are listed within a Tree Survey Schedule (***Appendix 1***) and plotted on all accompanying plans.

1.3 The stage 1 tree survey was carried out on 06 June 2024 by Russell Pearce, Consultant to Tree Solutions Ltd. Our appraisal of the mechanical integrity of trees on the site is enough to inform the current project. The assessment of trees is carried out from ground level without invasive investigation and the disclosure of hidden defects cannot therefore be expected. Whilst the survey is not specifically commissioned to report on matters of tree safety, we report obvious defects that are significant in relation to the existing and proposed land use. We do not carry out detailed safety inspections unless specifically instructed to do so in writing and have not carried out such inspections of trees on the proposal site.

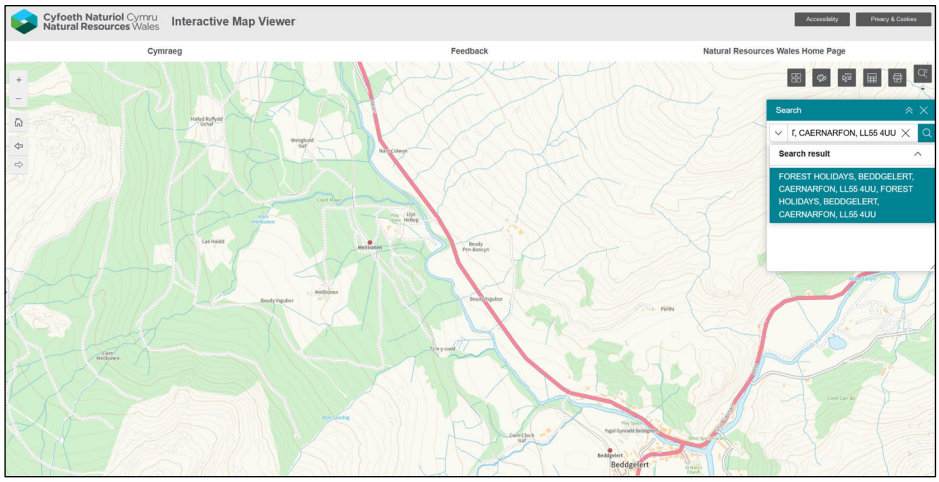
1.4 Sixty-two individual trees (T1–T62), fourteen groups (G1-G14) and one woodland (W1) were surveyed and mapped on an Impact Assessment Plan Ref: 24/AIA/SNPA/24, Drawing Nos. 1 at ***Appendix 2***. All arboricultural information recorded during the survey is presented within a schedule at ***Appendix 1***.

1.5 The Arboricultural Impact Assessment is based on the latest, Drawing No: BED/01/PP2/F provided by Forest Holidays.

## 2.0 STATUTORY CONTROLS & PLANNING POLICY

2.1 Unfortunately we have been unable to contact Snowdonia National Park Authority to ascertain if any trees are subject to a Tree Preservation Order or if the land falls within a designated Conservation Area. As such you are advised to seek confirmation on this prior to removing any trees not granted consent under this planning proposal.

2.1.2 A search or Natural Resources Wales (NRW) Ancient Woodland Inventory maps revealed no Semi-natural or Ancient Woodland designation on site.




**P1 – Extract from NRW Ancient Woodland Inventory map showing no designation**

### 2.2 Protected Species

2.2.1 Mature trees often contain cavities, crevices and hollows that offer potential habitat for species such as bats and barn owls. Both are afforded protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as The Conservation (Natural Habitats, &c) (Amendment) Regulations 2007.

### 2.3 Wildlife Habitats

2.3.1 Trees and hedgerows of most species provide valuable nesting sites for a wide range of birds, and it is likely that nesting birds will be present on the site during the period March to September.

## 3.0 THE SITE

3.1 The application site is within the southern section of Forest Holidays Beddgelert. It currently contains a mixed camping/caravan/motorhomes area within an established woodland setting. There is an existing access road/track that serves all pitches.

**P2 – Existing site with established pitches within woodland setting**

## 4.0 DEVELOPMENT PROPOSAL

4.1 Additional cabins and recreation building with associated infrastructure.

## 5.0 GENERAL CONSTRAINTS DATA - CONSTRUCTION EXCLUSION ZONES (CEZ's)

## 5.1 GENERAL

5.1.1 During the development process for retention trees, there may be three and even four constraints to consider: Construction Exclusion Zone (CEZ's):

- CEZ 1: Root Protection Area (see 5.2)
- CEZ 2: Tree Crown Protection (see 5.3)
- CEZ 3: Tree Dominance (see 5.4)
- CEZ 4: New Tree Planting Zone (see 5.5)

CEZ's are explained below:

## 5.2 CEZ 1: ROOT PROTECTION AREA (RPA)

5.2.1 The RPA, calculated in m², should be protected before and during any demolition/construction works. This ensures the effective retention of trees by safeguarding a reliable quantum of functioning tree roots. The RPA is based on a radial measure from the centre of the tree stem, which is calculated by multiplying the stem diameter by a factor of twelve or by the (mean stem diameter²) x number of stems for multi-stemmed trees.

5.2.2 During the AIA 2, the derived radial measure is converted by the arboriculturalist into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the tree(s), particularly in relation to factors affecting their likely rooting disposition. The RPA for each tree should initially be plotted as a circle centred on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution.

5.2.3 The means of protecting the RPA will include the installation of tree protective fencing prior to the start of any demolition or construction work on site. The prohibition of various activities within the RPA must be adhered to (e.g. mechanical excavation, soil stripping, fire lighting, material storage, lowering levels and creating excessive sealed surfacing) and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA.

## 5.3 CEZ 2: TREE CROWN PROTECTION ZONE

5.3.1 This is the area above ground occupied by the crown (branches) of the tree, along with allowances for working space (safe working area) and if appropriate, for future growth. The extent of CEZ 2 is determined by considering the existing and future crown spread of the tree(s), bearing in mind the possibility of this being modified by an acceptable quantum of pruning.

5.3.2 Minor access facilitation pruning may be required to trees immediately adjacent to the proposed cabin locations. Pruning works will be kept to minimum required to provide a necessary easement for installation purposes.

## 5.4 CEZ 3: TREE DOMINANCE ZONE

5.4.1 N/A due to the nature of the application being cabins within a woodland setting

## 5.5 CEZ 4: NEW PLANTING ZONE

5.5.1 N/A site is an established woodland.

## 6.0 SURVEY METHODOLOGY

6.1 The method used in the preparation of this report is based on the principles of BS 5837: 2012.

1. Tree heights were surveyed to the nearest 1m
2. Trunk diameters were measured by use of forestry girth tape
3. The category assessment (Table 1) on which the trees is based include current and long-term arboricultural, landscape, cultural and conservation values (BS5837: 2012). This table can be found at ***Appendix 1***
4. For clarity, the grading system is summarised from ***Table 2*** of the BS as follows:

**U grade** – trees for removal, effective for less than 10 years

**A grade** – trees of high quality and value, effective for more than 40 years

**B grade** – trees of moderate quality and value, effective for more than 20 years

**C grade** – trees of low quality and value, effective for 10 years

***Note: We have indicated colour coding on the drawing and therefore a monochrome copy should not be relied on.***

## 6.2 SOIL ASSESSMENT

6.2.1 N/A due to nature of development

## 7.0 JUXTAPOSITION OF TREES AND STRUCTURES

### 7.1 Below ground constraints

7.1.1 The below ground constraints are generally summarised as the root protection area (RPA). The shape of the RPA and its exact location will depend upon arboricultural considerations including likely tolerance of the tree to root disturbance; morphology and disposition of the roots when known influenced by past or existing site conditions; soil type and structure; and topography and drainage.

7.1.2 The purpose of the RPA is to prevent physical damage to tree roots and to prevent damage to the soil structure. Tree roots are damaged by soil compaction, changes in soil levels or soil contamination which could reduce tree health and/or stability.

7.1.3 Root patterns are affected by topography and characteristics of the soil or substrate. Where trees are located within proximity to existing hard standing or underground physical barriers, they are unlikely to have an even distribution of lateral roots due to restrictions in root growth created by compacted sub-grades beneath. All RPA's have been plotted unmodified as there are no significant underground barriers to prevent good radial growth.

### 7.2 Underground Services

7.2.1 We have considered the broad implications of the provision of underground services but the locations of existing and proposed were not identified on the plans supplied and, in this regard, our advice is of a general nature.

7.2.2 Drainage and service runs will need to be constructed within the rooting areas of retained trees. To reduce the extent of service trenches, one combined trench will be used to contain all the services. The service trench will be hand excavated within all designated RPAs to ensure that any adverse impact to underlying roots is kept to the minimum.

7.2.3 As with foundation design, low impact construction methods for services installation are now well established. For more information regarding underground services, reference should be made to the National Joint Utilities Group (NJUG) Publication No. 10. Volume 4 *'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' 2007.*

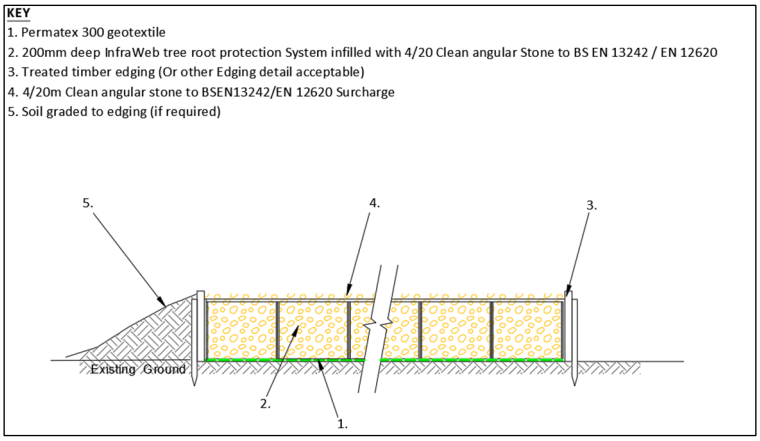
## 8.0 DEVELOPMENT IMPACT TO TREES

8.1 Tree Solutions carried out a stage one preliminary tree survey and provided the project architect with a report in which all existing trees and their respective Root Protection Areas (RPA) were identified and plotted on a tree constraints and impact assessment plan. Forest Holidays have a great deal of experience in installing cabins and associated infrastructure within woodland settings and have a proven track record of success with no adverse impacts to the health and vitality of the trees. The whole process is carefully orchestrated via their detailed 'Construction Environmental Management Plan' that has been used across their portfolio to ensure successful integration into the valuable woodland resource that is the principle of their business. As such the proposal has followed the recommendations contained with BS5837: 2012 and is in accordance with Planning Policy Wales Framework (PPW 2024), Snowdonia National Park Authority Planning Policies.

8.2 In order to accommodate the proposed development it is inevitable that some trees will require removal as identified and marked on the impact assessment plan at ***Appendix 3***. Whilst unfortunate to lose any trees, this is an established woodland with a significant amount of surrounding tree cover. The loss of these trees will be completely unnoticed given their location in the centre of the woodland ensuring no loss in the amenity or landscape value they afford the wider locale. Most trees lost are early mature specimens that as well as clearing space for the cabins and new road will will help create important open glades and provide space for adjacent canopy establishment.

8.3 There are four construction impacts to retained trees as set out below:

1. The proposed new access track and footpath alignment encroaches within the RPA of trees. To comply with the provisions of the BS and prevent damage to the trees these sections will be installed to a no-dig engineering solution using a three-dimensional cellular confinement system such as 'Cellweb' which will involve the installation of a layer of plastic cells laid above the existing ground level. The cells will be back filled with a free draining washed stone that contains no fines to help maintain adequate gaseous diffusion for tree roots below. A full detailed specification with cross section that complies with recommendations contained within para. 7.2 of BS5837: 2012 will be submitted by the project structural engineer for consideration and approval by the Council.




**P3 – Example no-dig cross section design**

2. The proposed new cabins encroach within the RPA of several trees. To prevent damage to any underlying tree roots the cabins will be supported on beams set on or above the existing ground level on a mini-piled foundation. This will be detailed by the project engineer in such a way as to ensure that the final design is sufficiently flexible to allow the piles to be moved if significant roots (over 25mm diameter) are encountered in the preferred pile location. The engineers design will be in accordance with recommendations contained within paragraph 7.5 of BS 5837: 2012. As the piling is required to be installed within the RPA, the smallest practical pile diameter shall be used to reduce the possibility of striking any major roots and reduce the size of rig required to sink the piles. All piles shall be sheathed to protect the soil and any adjacent roots from the potential toxic effect of concrete. Site specific foundation design shall be calculated by the project structural engineer and submitted for approval by the LPA. The installation of the piles can be carried out under the direct supervision of the Arboricultural Clerk of Works (ACoW) if required

3. Installation of cabin frame – upon completion of the piled foundation a working scaffold will be erected around the perimeter of each cabin location with the prefabricated panels moved by hand within this 'working area'. Where construction plant is required, they will be manoeuvred outside the RPA of trees. If movement is required within the RPA, ground protection boards/bogmats will be installed to ensure loads are evenly distributed and prevent compaction to underlying soils.

4. Removal of the existing compacted road and touring caravan pitches. To reduce potential damage to underlying roots, these areas will be lightly scrapped with a non-toothed bucket on a mini excavator under the supervision of the ACoW. Any exposed roots will be immediately backfilled with topsoil to prevent desiccation. Any damaged roots will be cleanly pruned using secateurs or sharp saw back to the next available inner node. Refer to Arboricultural Method Statement for details.

## 9.0 CONCLUSIONS

9.1 BS 5837: 2012 contains clear and current recommendations for a best practice approach to the assessment, retention, and protection of trees on development sites. The proposed development has followed this guidance by:

- Seeking arboricultural advice and undertaking a phase 1 preliminary tree survey to inform the layout and design of the proposed development
- Respecting the constraints posed to development of the site by high or moderate quality trees
- Acting upon arboricultural advice throughout the design process to obtain the best development proposal whilst considering the current and future tree requirements
- Cabins to be installed using pile and beam foundation design and set above ground level on cantilevered floors to avoid damage to underlying tree roots
- New roads to be laid using no-dig 3D cellular confinement systems where they encroach within the RPA of retained trees to avoid heavy ground compaction and root severance
- Works within the RPA of trees can be overseen by the project ACoW if made a condition of consent
- Taking the above into consideration, we can see no viable Arboricultural grounds for refusal.

## 10.0 LIMITING CONDITIONS

- Unless stated otherwise:
- Information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of the inspection.
- The inspection is limited to visual examination of the subject trees from ground level only and without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.
- This report has been prepared for the sole use and benefit of the client. Any liability of Tree Solutions shall not be extended to any third party.
- No part of this report can be reproduced without the authorisation of *Tree Solutions Ltd*.

## Appendix One

## Tree Survey Schedule

# TREE SURVEY SCHEDULE (BS5837: 2012)

TREE SOLUTIONS

| | | | |
|---|---|---|---|
| **Site** | LAND AT FOREST HOLIDAYS, BEDDGELERT | **Surveyor** | RUSSELL REARCE |
| **Client** | FOREST HOLIDAYS | **Assessment Dates** | 07-Jun-24 |
| **Brief** | ARBORICULTURAL IMPACT ASSESSMENT | **Viewing Conditions** | CLEAR |
| | | **Job Reference** | 24/AIA/SNPA/23 |



| Tree/Group/ Woodland Number | Name | Age | Height (m) | Crown clear | North | East | South | West | Diameter (mm) | Vitality | Comments | E.R.C | Management | Category | RPA (m) | RPA ($m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T01 | English Oak | EM | 13 | 2 | 6 | 7 | 5 | 6 | 580 | Good | Good structure. Open balanced spreading crown. Minor deadwood throughout crown. | 20+ | No action required. | B1 | 7 | 152 |
| T02 | English Oak | EM | 12 | 2 | 4 | 6 | 7 | 6 | 540 | Good | Good structure. Open balance spreading crown. Slightly suppressed by adjacent tree. Minor deadwood throughout crown. | 20+ | No action required. | B1 | 6.5 | 132 |
| T02 | Silver Birch | SM | 8 | 2 | 5 | 5 | 4 | 5 | 190 170 180 | Good | Moderate structure. Trifurcated at base with open balance spreading crown. Located directly adjacent to compacted parking area. | 20+ | No action required. | B1 | 3.7 | 44 |
| T04 | Silver Birch | EM | 9 | 1 | 3 | 2 | 4 | 2 | 360 | Good | Good structure. Located directly adjacent to compacted stone Road surface. Partially included impact wound at base on southside. Trifurcated below 2m. | 20+ | Remove for cabin location | B1 | 4,3 | 58 |
| T05 | Alder | EM | 13 | 2 | 3 | 5 | 5 | 5 | 290 210 300 | Good | Good structure. Open balanced crown. Trifurcated below 2m. Imbalanced crown with weight of gravity to South. Minor deadwood within crown. | 20+ | Remove for new access road | B1 | 5.6 | 99 |
| T06 | Lawson Cypress | EM | 12 | 0 | 2.5 | 2.5 | 2.5 | 2.5 | 430 130 240 100 | Moribund | Slender straight upright stems. In advanced state of decline with gingering of crown throughout and >80% crown dieback. | <10 | Remove. | U | N/A | N/A |
| T07 | Goat Willow | SM | 5 | 0 | 4 | 6 | 3 | 3 | 150 130 140 | Good | Poor structure. Trifurcated at base with all stems collapsing outwards from included unions. | <10 | Remove. | U | N/A | N/A |
| T08 | Silver Birch | EM | 20 | 7 | 4 | 4 | 4 | 4 | 430 | Good | Good structure. In middle of large group. Tall slender stem. High crown break. | 20+ | Remove for cabin location | B1 | 5 | 83 |
| T09 | Silver Birch | EM | 21 | 12 | 2 | 2 | 2 | 2 | 250 | Good | Moderate structure. Photographic form- single straight slender stem with high crown break. Small crown. | 20+ | Remove for cabin location | B1 | 3 | 28 |
| T10 | Silver Birch | SM | 14 | 6 | 2 | 2 | 2 | 2 | 240 | Dead | Dead tree with most of crown missing. | | Remove. | U | N/A | N/A |
| T11 | Silver Birch | EM | 20 | 5 | 4 | 2 | 2 | 2 | 380 | Good | Moderate structure. Minor lean to South with self-corrected stem with minor curvature | 20+ | No action required. | B1 | 4.5 | 65 |
| T12 | Silver Birch | M | 22 | 6 | 4 | 4 | 5 | 4 | 390 | Good | Tall tree with phototrophic form. Open balance spreading crown. Ivy covering primary branch framework. | 20+ | No action required. | B1 | 4.6 | 69 |
| T13 | English Oak | EM | 15 | 4 | 6 | 10 | 5 | 4 | 620 | Good | Good structure. Open balanced crown with weight bias to east. Dense ivy covering stem and primary branch framework. Minor deadwood within crown. | 20+ | No action required. | B1 | 7.4 | 174 |
| T14 | English Oak | SM | 16 | 1 | 4 | 10 | 2 | 1 | 260 160 | Good | Moderate structure. Heavily suppressed tree with slender phototrophic leaning stems. Heavy weight bias to northeast. | 10+ | No action required. | C1 | 5 | 82 |

| HEADINGS & ABBREVIATIONS | |
|---|---|
| **TREE NO.** | REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE (T = TREE, G = GROUP, H = HEDGE) |
| **SPECIES:** | COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST) |
| **AGE RANGE/LIFE STAGE:** | Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE |
| **HEIGHT:** | ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE Measured USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES |
| **CROWN SPREAD:** | MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP) |
| **CROWN CLEARANCE & DIRECTION OF GROWTH:** | HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING) |
| **STEM DIA/MULTI-STEM DIA:** | STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES |
| **VITALITY:** | A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD |
| **E.R.C. = ESTIMATED REMAINING CONTRIBUTION:** | RELATIVE USEFUL LIFE EXPECTANCY (YEARS |
| **BS 5837CATEGORY & SUB-CATEGORY GRADING** | A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION (SUB-CATEGORY REFERS TO ARBORICULTURAL., LANDSCAPE AND CULTURAL/CONSERVATION VALUES) |
| **BS 5837 RADIUS & BS 5837 RPA:** | 707 $M^2$) NOTE – ALL CALCULATIONS ROUNDED TO NEAREST DECIMAL |

# TREE SURVEY SCHEDULE (BS5837: 2012)

TREE SOLUTIONS

| | | | | | |
|---|---|---|---|---|---|
| **Site** | LAND AT FOREST HOLIDAYS, BEDDGELERT | **Surveyor** | RUSSELL REARCE | | Page 2 of 5 |
| **Client** | FOREST HOLIDAYS | **Assessment Dates** | 07-Jun-24 | | |
| **Brief** | ARBORICULTURAL IMPACT ASSESSMENT | **Viewing Conditions** | CLEAR | | |
| | | **Job Reference** | 24/AIA/SNPA/23 | | |

| Tree/Group/ Woodland Number | Name | Age | Height (m) | Crown clear | North | East | South | West | Diameter (mm) | Vitality | Comments | E.R.C | Management | Category | RPA (m) | RPA (m²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T15 | English Oak | EM | 16 | 1 | 7 | 9 | 3 | 3 | 440 | Good | Good structure. Slightly suppressed by adjacent trees with weight bias to northeast. Minor dead wood within crown. Co-dominant bifurcation at 1.5 m. | 20+ | No action required. | B1 | 5.3 | 87 |
| T16 | English Oak | EM | 17 | 0 | 5 | 6 | 4 | 0.5 | 370 | Good | Good structure. Suppressed by adjacent trees with significant weight bias to east. Minor deadwood within crown. | 20+ | No action required. | B1 | 4.4 | 62 |
| T17 | English Oak | SM | 8 | 1 | 5 | 5 | 5 | 5 | 410 | Good | Good structure. Open balance spreading crown. Multi-stemmed at 1.25m. DBH taken at 0.5 metres. Open balance spreading crown. | 20+ | No action required. | B1 | 5 | 76 |
| T18 | Silver Birch | M | 18 | 6 | 4 | 6 | 5 | 5 | 340 390 | Good | Good structure. Codominant bifurcation at 0.5m. Open balanced spreading crown. No significant defects noted. | 20+ | No action required. | B1 | 6.2 | 121 |
| T19 | English Oak | M | 16 | 5 | 10 | 8 | 7 | 6 | 700 | Good | Good structure. Open balance spreading crown. Minor deadwood throughout crown. Snapped out hung up branches within crown. Trifurcated at 3m . | 40+ | No action required. | A1 | 8.4 | 222 |
| T20 | English Oak | EM | 17 | 5 | 7 | 6 | 5 | 5 | 510 | Good | Good structure. Phototrophic form. High crown-break. Large deadwood in lower crown. | 20+ | No action required. | B1 | 6 | 117 |
| T21 | English Oak | M | 20 | 3 | 11 | 10 | 11 | 8 | 840 | Good | Excellent specimen. Trifurcation at 2.5m. Open balanced spreading crown. Minor deadwood within crown. | 40+ | No action required. | A1 | 10 | 320 |
| T22 | English Oak | EM | 19 | 5 | 7 | 7 | 7 | 7 | 510 | Good | Good structure. Open balance spreading crown. Minor deadwood within crown. | 20+ | No action required. | B1 | 6 | 117 |
| T23 | English Oak | EM | 17 | 2 | 7 | 7 | 7 | 7 | 430 | Good | Good structure. Open balanced crown. Minor crown asymmetry due to the proximity of adjacent trees. | 20+ | No action required. | B1 | 5 | 83 |
| T24 | English Oak | EM | 16 | 2 | 7 | 7 | 7 | 7 | 490 | Good | Good structure. Open balanced spreading crown. Minor crown asymmetry due to proximity of adjacent trees. Some minor exudations on underside of limb to west of crown. | 20+ | No action required. | B1 | 5.9 | 108 |
| T25 | English Oak | SM | 15 | 7 | 5 | 5 | 5 | 5 | 340 | Good | Moderate structure. Slender photographic form. Slightly suppressed by adjacent trees. Minor deadwood within crown. | 20+ | Remove for cabin location | B1 | 4 | 52 |
| T26 | English Oak | M | 18 | 2 | 10 | 10 | 10 | 10 | 810 | Good | Excellent specimen. Open balanced spreading crown. Codominant bifurcation at 2.5m. Hazard beam split In south side of crown - stable at the moment. | 40+ | No action required. | A1 | 9.7 | 296 |
| T27 | English Oak | SM | 14 | 2 | 7 | 6 | 4 | 5 | 490 | Good | Good structure. Open balanced crown. Weight bias slightly to north. | 20+ | No action required. | B1 | 6 | 108 |
| T28 | English Oak | M | 19 | 6 | 8 | 8 | 8 | 8 | 770 | Good | Good structure. Codominant bifurcation at 2.5m. Open balanced spreading crown. Moderate deadwood in centre of crown. Excellent specimen. | 40+ | No action required. | A1 | 9 | 268 |
| T29 | Red Oak | EM | 19 | 8 | 9 | 5 | 6 | 6 | 490 | Moderate | Good structure. Open balanced crown. Minor crown asymmetry due to proximity of adjacent trees. Primary union at 5m. Some localised dieback in upper north of crown. | 10+ | Monitor for decline | C1 | 5.9 | 108 |
| T30 | English Oak | EM | 15 | 3 | 8 | 7 | 2 | 6 | 390 | Good | Moderate structure. Suppressed asymmetric crown due to proximity of adjacent tree - significant weight bias to north. Heavily waterlogged RPA. | 20+ | No action required. | B1 | 4.6 | 69 |
| T31 | English Oak | M | 20 | 6 | 8 | 8 | 8 | 8 | 610 | Moderate | Good structure. Open balanced spreading crown. Reduced vitality. Waterlogged RPA. | 20+ | Monitor for decline. | B1 | 7.3 | 168 |
| T32 | Larch | EM | 19 | 5 | 4 | 4 | 4 | 4 | 460 | Good | Good structure. Single straight slender stem. Minor deadwood in lower half of crown. | 20+ | No action required. | B1 | 5.5 | 96 |

# TREE SURVEY SCHEDULE (BS5837: 2012)

TREE SOLUTIONS

| | | | | | |
|---|---|---|---|---|---|
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| | | **Job Reference** | 24/AIA/SNPA/23 | | |

| Tree/Group/ Woodland Number | Name | Age | Height (m) | Crown clear | North | East | South | West | Diameter (mm) | Vitality | Comments | E.R.C | Management | Category | RPA (m) | RPA ($m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T33 | English Oak | EM | 16 | 5 | 7 | 7 | 7 | 7 | 590 | Good | Good structure. Open balanced spreading crown. Trifurcation below 4.5m. Recent crown lift over camping spot. | 20+ | No action required. | B1 | 7 | 157 |
| T34 | Red Oak | M | 21 | 5 | 7 | 7 | 7 | 7 | 570 | Moderate | Good structure. Open balance spreading crown. Reduced vitality. Reduced crown density. | 20+ | Monitor for decline. | B1 | 6.8 | 146 |
| T35 | Red Oak | M | 22 | 5 | 7 | 7 | 7 | 7 | 640 | Good | Good structure. Strip of partially occluded stem lesions on east side of stem below 4m. Co-dominant trifurcation at 5 m. | 20+ | No action required. | C1 | 7.6 | 185 |
| T36 | Red Oak | M | 19 | 5 | 7 | 2 | 6 | 11 | 570 | Good | Moderate structure. Slightly suppressed by adjacent tree with significant weight bias to the west. Minor deadwood throughout crown. Codominant trifurcation at 5m. | 20+ | No action required. | B1 | 6.8 | 147 |
| T37 | Red Oak | Y | 7 | 3 | 4 | 4 | 4 | 1 | 220 | Good | Moderate structure. Suppressed by adjacent trees. Significant weight biased to east. | 10+ | No action required. | C1 | 2.6 | 22 |
| T38 | English Oak | EM | 18 | 4 | 5 | 7 | 7 | 7 | 550 | Good | Good structure. Open balance spreading crown. No defects noted. | 20+ | No action required. | B1 | 6.6 | 136 |
| T39 | Red Oak | M | 21 | 4 | 8 | 8 | 8 | 8 | 650 | Good | Good structure. Open balance spreading crown. | 20+ | No action required. | B1 | 7.8 | 191 |
| T40 | Red Oak | EM | 19 | 4 | 7 | 7 | 7 | 7 | 600 | Moderate | Good structure. Sparse crown. Long slender stems from 3m. Bifurcation at 2 m. | 10+ | Monitor for decline. | C1 | 7.2 | 162 |
| T41 | Red Oak | EM | 20 | 4 | 7 | 2 | 7 | 8 | 570 | Good | Good structure. Codominant trifurcation at 5m. Minor crown asymmetry and weight bias to west due to proximity of adjacent trees. | 20+ | No action required. | B1 | 6.8 | 147 |
| T42 | English Oak | EM | 19 | 3 | 4 | 4 | 4 | 4 | 340 | Good | Moderate structure. Single slender straight stem. High crown. Minor deadwood in lower crown. | 20+ | No action required. | B1 | 4 | 52 |
| T43 | Red Oak | EM | 11 | 4 | 3 | 3 | 3 | 3 | 600 | Good | Moderate structure. Recent very heavy reduction. | 10+ | Remove for cabin location | C1 | 7.2 | 162 |
| T44 | Red Oak | SM | 17 | 5 | 3 | 6 | 6 | 1 | 480 | Good | Good structure. Slender stem high small crown. Minor crown asymmetry due to proximity of adjacent trees. | 20+ | No action required. | B1 | 5.7 | 104 |
| T45 | Red Oak | EM | 19 | 7 | 8 | 8 | 8 | 8 | 570 | Moderate | Good structure. Open balance spreading crown. Slight reduction in vitality. Some chlorosis in leaves. | 20+ | No action required. | B1 | 6.8 | 147 |
| T46 | Red Oak | EM | 16 | 7 | 6 | 6 | 6 | 6 | 610 | Good | Moderate structure. Significant recent reduction. Codominant bifurcated included primary union. | 20+ | Remove for cabin location | B1 | 7.3 | 168 |
| T47 | Red Oak | EM | 19 | 7 | 7 | 5 | 2 | 6 | 480 | Moderate | Good structure. Reduced crown density. Deadwood in crown. Bifurcation at 6m. | 10+ | Monitor for decline | C1 | 5.7 | 104 |
| T48 | Beech | EM | 17 | 3 | 6 | 6 | 6 | 6 | 530 | Good | Good structure. Open balanced spreading crown. Codominant bifurcation at 2m. | 20+ | No action required. | B1 | 6.4 | 127 |
| T49 | Sweet chestnut | EM | 16 | 4 | 5 | 5 | 5 | 5 | 620 | Moderate | Good structure. Single slender straight stem. Localised reduction in vitality in upper crown. | 10+ | Remove for cabin location | C1 | 7.4 | 173 |
| T50 | Beech | M | 19 | 4 | 9 | 9 | 9 | 9 | 810 | Good | Good structure. Open balance spreading crown. Acute primary Union at 1.75m. | 20+ | No action required. | B1 | 9.7 | 300 |
| T51 | Silver Birch | SM | 10 | 2 | 3 | 1 | 2 | 5 | 190 | Moderate | Slightly suppressed by adjacent trees. Slender curved phototrophic stem. Low aesthetic value. | 10+ | No action required. | C1 | 2.3 | 16 |

# TREE SURVEY SCHEDULE (BS5837: 2012)

TREE SOLUTIONS

| | | | | | |
|---|---|---|---|---|---|
| **Site** | LAND AT FOREST HOLIDAYS, BEDDGELERT | **Surveyor** | RUSSELL REARCE |  | |
| **Client** | FOREST HOLIDAYS | **Assessment Dates** | 07-Jun-24 | | |
| **Brief** | ARBORICULTURAL IMPACT ASSESSMENT | **Viewing Conditions** | CLEAR | | |
| | | **Job Reference** | 24/AIA/SNPA/23 | | |

| Tree/Group/ Woodland Number | Name | Age | Height (m) | Crown clear | North | East | South | West | Diameter (mm) | Vitality | Comments | E.R.C | Management | Category | RPA (m) | RPA (m²) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T52 | Sycamore | Y | 9 | 3 | 4 | 5 | 2 | 1 | 220 | Good | Moderate structure. Suppressed understory tree. Previously topped at 3m. Low aesthetic value. | 10+ | Remove for cabin location | C1 | 2.6 | 22 |
| T53 | Rowan | SM | 7 | 3 | 1.5 | 1.5 | 1.5 | 1.5 | 220 | Moderate | Moderate structure. Suppressed understory tree of low quality. Low aesthetic value. Acute codominant bifurcation at 1.25m. | 10+ | No works | C1 | 2.6 | 22 |
| T54 | English Oak | EM | 19 | 4 | 4 | 6 | 6 | 3 | 550 | Good | Good structure. Single straight stem. Open balanced crown with slight weight bias to east. No significant defects noted. | 20+ | No action required. | B1 | 6.6 | 136 |
| T55 | Beech | M | 20 | 3 | 6 | 6 | 6 | 6 | 640 | Good | Moderate structure. Single straight stem. Open balanced crown. Lack of buttressing on west side of stem base - limb removed at 5m on same side. | 20+ | No action required. | B1 | 7.6 | 185 |
| T56 | Larch | M | 23 | 3 | 6 | 6 | 6 | 6 | 660 | Good | Good structure. Single straight stem. Open balanced ground. Minor deadwood in lower crown. | 20+ | No action required. | B1 | 8 | 200 |
| T57 | English Oak | EM | 18 | 4 | 6 | 6 | 6 | 6 | 390 | Good | Good structure. Codominant bifurcation at 5m. Slender stem. High crown. | 20+ | Remove for cabin location | B1 | 4.6 | 69 |
| T58 | Beech | EM | 18 | 3 | 6 | 6 | 6 | 6 | 540 | Moderate | Good structure. Open balanced spreading crown. Localised dieback and reduced crown density in upper crown. | 10+ | Monitor for decline | C1 | 6.5 | 132 |
| T59 | Silver Birch | EM | 17 | 6 | 5 | 5 | 5 | 5 | 350 | Moderate | Good structure. Open balance spreading crown. Co-dominant bifurcation at 5m. Minor reduction in crown density. | 20+ | No action required. | B1 | 4.2 | 55 |
| T60 | Beech | SM | 15 | 2 | 7 | 7 | 7 | 7 | 470 | Good | Moderate structure. Open balance spreading crown. Squat form due to exposure. Central leader historically failed at approximately 8m. | 20+ | No action required. | B1 | 5.6 | 100 |
| T61 | English Oak | Y | 13 | 2 | 4 | 4 | 4 | 4 | 260 | Good | Good structure. Open balanced crown. Minor stem kink at 4m. | 20+ | No action required. | B1 | 3 | 30 |
| T62 | Downy Birch | M | 21 | 3 | 7 | 7 | 7 | 7 | 870 | Good | Good structure. Open balanced spreading crown. Trifurcation below 4 m with acute included primary unions. | 40+ | No action required. | A1 | 10.5 | 342 |
| G01 | Oak, Birch & Western Red Cedar | SM | 12 to 16 | 1 | 7 | 7 | 7 | 7 | 450 | Good | Good structure. Mixed group surrounding camping field. Acute included primary unions. Phototrophic form. | 20+ | No action required. | B2 | 5.4 | 92 |
| G02 | English Oak and Silver Birch | SM | 7 to 11 | 0 | 4 | 4 | 4 | 4 | 230 | Good | Group of x5. No defects noted. | 10+ | No action required. | C2 | 2.7 | 23 |
| G03 | Silver Birch and Alder | SM | 7 to 10 | 1 | 3 | 3 | 3 | 3 | 280 | Good | Moderate structure. Group of x5 trees located alongside compacted road surface area. No significant defects noted. | 20+ | Remove for new access road & cabin | B2 | 3.4 | 35 |
| G04 | Silver Birch, Rowan and Oak | SM | 5 to 12 | 3 | 4 | 4 | 4 | 4 | 280 | Good | Good structure. Roughly linear group of approximately x12 trees. Slender phototrophic form. No significant defects noted. | 20+ | No action required. | B2 | 3.4 | 35 |
| G06 | English, Oak and Larch | EM | 16 to 24 | | 7 | 7 | 7 | 7 | 500 | Good | Group of approximately x25 trees running adjacent to river. High value group of trees. Minor deadwood throughout canopy. | 40+ | No action required. | A2 | 6 | 113 |
| G07 | Silver Birch and English Oak | SM | 12 to 15 | 3 | 3.5 | 3.5 | 3.5 | 3.5 | 330 | Good | Moderate structure. Group of trees on small embankment adjacent to access road. Slender photographic form. Some standing deadwood within group. | 20+ | Remove 1 tree for cabin location | B2 | 4 | 50 |
| G08 | English Oak | SM | 11 to 15 | 3 | 5 | 5 | 5 | 5 | 280 | Good | Moderate structure. Dense group. Slender phototropic form. | 20+ | No action required. | B2 | 3.4 | 35 |
| G09 | Red Oak | EM | 20 | 4 | 6 | 6 | 6 | 6 | 440 | Good | Good structure. Group of x 6 trees that may require removal for installation of lodge. Minor deadwood within crown. | 20+ | Remove marked up trees for cabin location | B2 | 5.3 | 87 |

# TREE SURVEY SCHEDULE (BS5837: 2012)

TREE SOLUTIONS

| | | | | | |
|---|---|---|---|---|---|
| **Site** | LAND AT FOREST HOLIDAYS, BEDDGELERT | **Surveyor** | RUSSELL REARCE | | Page 5 of 5 |
| **Client** | FOREST HOLIDAYS | **Assessment Dates** | 07-Jun-24 | | |
| **Brief** | ARBORICULTURAL IMPACT ASSESSMENT | **Viewing Conditions** | CLEAR | | |
| | | **Job Reference** | 24/AIA/SNPA/23 | | |

| Tree/Group/ Woodland Number | Name | Age | Height (m) | Crown clear | North | East | South | West | Diameter (mm) | Vitality | Comments | E.R.C | Management | Category | RPA (m) | RPA ($m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G10 | Beech | EM | 19 to 22 | 3 | 7 | 7 | 7 | 7 | 480 | Good | Group of x8 trees forming one closed canopy. Minor deadwood throughout canopy. Acute primary unions. No significant defects noted. | 40+ | Remove 1 tree for cabin location | A2 | 5.7 | 104 |
| G11 | Mixed Group | Y to SM | 8 to 12 | 1 | 3 | 3 | 3 | 3 | 200 | Good | Dense closely proximal group - predominantly Birch and Oak. Very slender stems. | 10+ | Remove marked up trees for cabin location | C2 | 2.4 | 18 |
| G12 | Birch | M | 13 | 3 | 3 | 3 | 3 | 3 | 280 | Good | No visual defects | 20 | No works | B2 | 3.4 | 35 |
| G13 | Leyland Cypress | M | 13 | 0 | 2 | 2 | 2 | 2 | 480 | Good | Unattractive group planted as screen | 10 | No works | C2 | 5.7 | 104 |
| G14 | Oak & Birch | EM | 17 | 6 | 5 | 5 | 5 | 5 | 350 | Moderate | Good structured group, no significant defects noted | 20+ | Remove 2 trees for reception building | B1 | 4.2 | 55 |
| W1 | English Oak, Red Oak, Birch, Sweet Chestnut and Beech | EM | 18 to 22 | 2.5 | 7 | 7 | 7 | 7 | See plan | Good | Largely uniform woodland group. Predominantly early mature with some mature and semi-mature trees interspersed. Minor deadwood throughout canopy. Some small standing deadwood in understory. No significant defects noted. | 20+ | Remove marked up trees to accommodate new access road and cabin locations | B2 | Various | Various |

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**<br>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)<br>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline<br>• 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<br>*NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.* | | | See Table 2 |
| | **1 Mainly arboricultural qualities** | **2 Mainly landscape qualities** | **3 Mainly cultural values, including conservation** | |
| **Trees to be considered for retention** | | | | |
| **Category A**<br>**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) | See Table 2 |
| **Category B**<br>**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 | See Table 2 |
| **Category C**<br>**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 | See Table 2 |

 

## Appendix Two

## Impact Assessment Plan

Base Camp

Forest Retreat

A 4085

Railway Station

West Highland Railway

Floodplain and reparian edge to be planted with native species

Camping facilities will be relocated and area restored to vegetation

3 hard standings for team accommodation, parking and screening fence from cabins

Team Accommodation

Camping facilities will be removed and area restored to vegetation

All hard standings to be removed and planted

Relocated facilities building for team use

Multi-user route to Beddgelert to be improved and upgraded

SCHEDULE OF CABIN ACCOMMODATION

| Cabin Type | Quantity |
|---|---|
| 1 Bed | 1 + 4 proposed |
| 2 Bed | 9 + 10 proposed |
| 2 Bed DDA | 1 |
| 3 Bed | 5 + 6 proposed |
| 4 Bed | + 2 proposed (1 tree house) |
| TOTAL | 16 + 22 proposed 38 Units |

KEY

- Proposed 1 Bed Cabin Hideaway
- Proposed 2 Bed Cabin
- Proposed 3 Bed Cabin
- Proposed 4 Bed Cabin
- Tree House
- Proposed recycling point
- Existing recycling point
- Existing buildings
- Existing roads, paths and parking
- Proposed roads, paths and parking
- Hardstanding areas to be removed and planted
- Stream easement buffer

Legend

Root Protection Area Modified to Account for Site Features

Category — Crown Spread — Tree Number — Root Protection Area

- Category A (High Quality)
- Category B (Moderate Quality)
- Category C (Low Quality)
- Category U (Dead/Dying/In Decline)
- Tree Proposed for Removal

NOTE: Tree/group numbers marked with an * have approximate locations.

Client: Forest Holidays

Project: Proposed Cabins, Forest Holidays, Beddgelert

Title: Arboricultural Impact Assessment

Scale: 1:500 at A0 | Date: July 2024

Drawn By: SD | Revision: A

Job Ref: 24/AIA/SNPA/23 | Drawing No: 01

Do not scale from this drawing all dimensions to be checked on site.



TREE SOLUTIONS
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0m 10m 20m 30m 40m 50m