# Tree Risk Management Appraisal

of Trees within the Identified Boundaries at

## Shireburne Caravan Park, Edisford Road, Waddington, Lancashire, BB7 3LB

Prepared by:

Bowland Tree Consultancy Ltd

November 2025

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# TREE RISK MANAGEMENT APPRAISAL
# SHIREBURNE CARAVAN PARK, WADDINGTON

## PROJECT DETAILS

| | |
|---|---|
| **Project No.:** | BTC3337 |
| **Site:** | Shireburne Caravan Park, Edisford Road, Waddington, Lancashire, BB7 3LB |
| **Survey Type:** | Individual Tree Survey |
| **Tree(s) Considered:** | Trees within site boundaries as identified by client |
| **Report Time Frame:** | 12 months from date of issue |
| **Next Inspection Date:** | ≈18 months from date of issue |
| **Client:** | Shireburne Park Ltd |
| **Survey Dates:** | 14 & 20 October 2025 |
| **Surveyor:** | Noah Singleton BSc(Hons) |
| **Report Prepared by:** | Noah Singleton BSc(Hons) |
| **Report Checked by:** | Joseph Lambert BSc(Hons) FdSc MArborA MICFor |
| **Date of Issue:** | 26 November 2025 |
| **Version No:** | 1 |

## 1. CIVIL LAW REGARDING TREE OWNERSHIP AND DUTY OF CARE

1.1 Under civil law the owner of the land on which a tree stands, together with any party who has control over the tree's management, has a duty of care to take reasonable steps to prevent or minimise the risk of personal injury and/or damage to property from any tree located within the curtilage of the land in question.

1.2 In turn, it is accepted that these steps should normally include commissioning a qualified and experienced arboriculturist to survey the tree in order to identify and appraise any risk of harm to persons or damage to property that it may present and, where unacceptable risks are identified, taking suitable remedial action to negate or reduce those risks accordingly.

## 2. QTRA METHODOLOGY OVERVIEW AND APPLICATION IN MANAGEMENT DECISIONS

2.1 A survey was carried out in order to consider the general structural stability of the identified trees at the site and the associated risk of harm posed to persons and/or property and, from this information, to make management recommendations to reduce any risks identified to be unacceptable to a level that is considered to be either tolerable or broadly acceptable (see Table 1, below).

2.2 The Quantified Tree Risk Assessment (QTRA) methodology utilised for the tree survey (see appended QTRA Practice Note for more details) quantifies the three components of tree failure risk, which are:
i. *Target* (something with potential to be harmed and/or damaged by the mechanical failure of tree parts);
ii. *Impact Potential*; and
iii. *Probability of Failure* (within the coming year).

2.3 The product of the three component values is the annualised 'Risk of Harm', which is a combined measure of the likelihood and the consequence of tree failure considered in terms of the loss within the coming year, and is expressed as a probability. In applying the 'Tolerability of Risk Framework' (ToR) the QTRA methodology divides the 'Risk of Harm' into three threshold values, being;
1. *Unacceptable* (i.e. >1/1,000), which is unacceptable and will not ordinarily be tolerated;
2. *Tolerable* (i.e. between 1/1,000,000 and 1/1,000, where the Risk of Harm will be tolerable if it is As Low As Reasonably Practicable (ALARP); but a Risk of Harm 1/10,000 or greater will not ordinarily be Tolerable where it is imposed on others, such as the public. In the Tolerable range management decisions are informed by consideration of the benefits and costs of risk control, including benefits provided by trees that would be lost to risk control measures; and
3. *Broadly Acceptable* (<1/1,000,000), which is already ALARP.

2.4 The QTRA advisory thresholds, (see Table 1, below) are proposed as a reasonable approach to balancing safety from falling trees with the costs of risk reduction. This approach takes account of the principles of ALARP and ToR, but does not dictate how these principles should be applied. While the thresholds can be the foundation of a robust policy for tree risk management, tree managers should make decisions based on their own situation, values and resources.

**Table 1: QTRA Advisory Risk Thresholds:**

| Threshold | Description | Action |
|---|---|---|
| Risk of harm of 1/1,000 or greater | **Unacceptable** - Risks will not ordinarily be tolerated | • Control the risk |
| Risk of harm between 1/1,000 and 1/10,000 | **Unacceptable** (where imposed on others) - Risks will not ordinarily be tolerated | • Control the risk<br>• Review the risk |
| | **Tolerable** (by agreement) Risks may be tolerated if those exposed to the risk accept it, or the tree has exceptional value | • Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value<br>• Review the risk |
| Risk of harm between 1/10,000 and 1/1,000,000 | **Tolerable** (where imposed on others) - Risks are tolerable if ALARP | • Assess costs and benefits of risk control<br>• Control the risk only where a significant benefit might be achieved at reasonable cost<br>• Review the risk |
| Risk of harm less than 1/1,000,000 | **Broadly Acceptable** - Risk is already ALARP | • No action currently required<br>• Review the risk |

2.5 As detailed in Table 1, a Risk of Harm less than 1/1,000,000 is Broadly Acceptable and already ALARP (i.e. 'as low as reasonably practicable'). A Risk of Harm 1/1,000 or greater is unacceptable and will not

ordinarily be tolerated. Between these two thresholds, the Risk of Harm is in the Tolerable region of the ToR Framework and will be tolerable if it is ALARP, but a Risk of Harm 1/10,000 or greater will not ordinarily be Tolerable where it is imposed on others, such as the public. Here, management decisions are informed by consideration of the benefits and costs of risk control, including benefits provided by trees that would be lost to risk control measures.

2.6 In respect of the above the assessor (i.e. Bowland Tree Consultancy Ltd) may consider the costs of risk control when providing options for management if specifically asked to do so, but the tree owner/manager, who owns the risk and therefore exercises control over the costs, must consider the balance and make the final management decision(s).

## 3. PROTECTED SPECIES AND STATUTORY RESTRICTIONS

### Tree Preservation Orders and Conservation Area Designations

3.1 The Town & Country Planning Act (1990) (the Act) and associated Regulations empower Local Planning Authorities (LPAs) to protect trees in the interests of amenity by making Tree Preservation Orders (TPOs). The Act also affords protection for trees of over 75mm diameter that stand within the curtilage of a Conservation Area (CA). Subject to certain exemptions, an application must be made to the LPA in question to carry out works upon or to remove trees that are subject to a TPO, whilst six weeks' notice of intention must be given to carry out works upon or to remove trees within a CA that are not protected by a TPO.

3.2 According to the LPA's website, checked 06 November 2025, the site does not stand within a CA, however the TPO reference Ribble Valley Borough Council (Waddington) Tree Preservation Order No.5, 1976 sits within the boundaries of the site. As such, other than for limited exceptions, it is essential that relevant permissions are obtained from the planning department of the local council, in this case Ribble Valley Borough Council, prior to scheduling or undertaking any tree works.

### Protected Species

3.3 Nesting birds are afforded statutory protection under the Wildlife & Countryside Act (1981) (as amended) and their potential presence should therefore be considered when clipping hedges, removing climbing plants and pruning and removing trees. The breeding period for woodlands runs from March to August inclusive. Hedges provide valuable nesting sites for many birds and clipping should therefore be avoided during March to July. Trees, hedges and ivy should be inspected for nests prior to pruning or removal and any work likely to destroy or disturb active nests should be avoided until the young have fledged.

3.4 All bat species and their roosts are protected under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). In this respect, it should be noted that it is possible that unidentified bat habitat features may be located high in tree crowns and all personnel carrying out tree works at the site should therefore be vigilant and mindful of the possibility that roosting bats may be present in trees with such features. If any bat roosts are identified, then it is essential that works are halted immediately and that a suitably qualified and experienced ecologist investigates and advises on appropriate actions prior to works continuing.

3.5 In turn, any subsequent works carried out in relation to any protected species must be carried out under guidance from a suitably qualified and experienced ecologist and in strict accordance with applicable industry guidance (i.e. BS8596:2015 - Surveying for Bats in Trees and Woodlands).

### Felling Licences

3.6 Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to remove growing trees amounting to more than five cubic metres of timber in a calendar quarter, providing no more than two cubic metres are sold. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties. A felling licence is, however, not required for trees standing within the curtilage of a private residential garden, orchard, churchyard or in public open spaces such as land registered under the Commons Act 1899, village greens, public parks and public gardens.

3.7 Consequently, the requirement for a Felling Licence for any tree removal works recommended herein, should be assessed, evaluated, and dealt with by the tree contractor instructed to undertake the works under consideration.

## 4. SUMMARY OF SURVEY FINDINGS AND RECOMMENDATIONS

4.1 An 'Individual Tree Survey' (see 'Schedule of Operations' appended to agreed project quote) was carried out on 14 & 20 November 2025 at the site under consideration. In turn, the ownership boundaries, and the trees to be considered within the survey, were identified previously by the instructing client's representative Ashley Rostron of Shireburne Park Ltd prior to the site visit.

4.2 The survey identified 56 individual trees, 36 groups of trees and four woodlands. They are in the young to mature age range and have heights of up to approximately 25 metres, stem diameters of up to 1230 millimetres, and maximum diametral crown spreads of up to approximately 26 metres.

4.3 The site under consideration is a private residential caravan park located in a rural edge area to the west of the village of Waddington. The surveyed area consists of Shireburne House to the centre, and several hundred static caravans, with hard-surfaced internal roads, areas of managed grass, and the majority of the trees within the site are located in its southern section. The site is bordered to the north by fields, to the east by the evidently moderately high usage Edisford Road, and to the south and west by Bashall Brook (see appended Tree Survey Plan). Edisford Road is a public right of way, but there are no public rights of way either running through the site or around its other boundaries. As such, most of the site is hidden from wider public view.

4.4 As a component of this appraisal various targets were identified to be within falling distances of the surveyed trees, including, but not restricted to, pedestrians and vehicles and their occupants using Edisford Road, parked vehicles in the designated car-parking areas, persons accessing the properties (i.e. caravans) on foot, and the properties and their occupants themselves.

4.5 With regard to the latter it should be noted that the caravans are understood to be permanently occupied throughout the year, including during inclement weather occurrences such as storms, and are evidently of relatively light construction whereby they would afford little protection to the occupiers in the event of being struck by a relatively large diameter tree branch or stem.

4.6 In regards to the survey it was noted that various trees had inspection impediments, such as stems within dense hedgerows or within wider vegetation, or dense coverings of climbing plants such as Ivy. In turn, it is not considered reasonable to justify the cost of removal, and the subsequent loss of habitat benefits, of such impediments unless an obvious tree risk feature or physiological issue is observed and further detailed inspection is deemed necessary by the surveyor.

4.7 Furthermore, it is noted that a widespread presence of Ash Dieback Disease *(Hymenoscyphus fraxineus)* was identified throughout the Ash tree population, both within the site under consideration and the wider local landscape.

4.8 In turn, as a guide, the surveyed Ash trees have been assessed in accordance with the following scales of approximate percentages of remaining canopy at the time of viewing:
- Class 1 – 100% canopy - Healthy trees displaying good vitality;
- Class 2 – 75% canopy - Weakened trees show treetop shoots in the degeneration phase;
- Class 3 – 50% canopy – Severely weakened trees exhibiting a significant reduction in vitality, e.g. with bushy and lumpy accumulation of growth; and
- Class 4 – 25% canopy – Trees in a state of severe decline, e.g. with large dead canopy areas and twigs and branches starting to break off.

4.9 With regard to these classifications, it is emphasised that trees falling within classes 3 and 4 are normally recommended for risk management remedial works where targets exist within falling distance of said trees.

4.10 In turn, as highlighted with the colour orange in the appended Tree Survey Schedule and in Table 2, overleaf, the risk assessment established that trees T1, T4, T5, T6, T7, T18, T24, T40, T43, T49, G3 & G36 have calculated QTRA risk indices that fall within the unacceptable risk threshold range of 1/10,000 or over (please refer to Table 1, on the previous page, with regard to advisory tree risk thresholds). Consequently, as also detailed in the TSS, works are recommended to mitigate the risk that these trees present.

4.11 As also detailed in Table 2, works have been recommended to various trees with calculated QTRA risk indices that fall within the tolerable risk threshold range (as highlighted with the colour yellow) either in order to negate the risk that these trees present, for general non-risk management related reasons (as denoted with the suffix (M)), to mitigate risk to a fixed structure (as denoted with the suffix (S)) or, where applicable, to enable applicable trees to be inspected in further detail for risk assessment purposes (as denoted with the suffix (I)).

**Table 2: Tree Work Recommendations:**

| No. | Species | Management Works Recommended* | Responsible Professional | Work Priority |
|---|---|---|---|---|
| T1 | Common Ash | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T2 | Sycamore | 1. Sever Ivy at ground level around stem circumference and strip Ivy from main stem to a height of approximately 1.5m in order to facilitate clear visual inspection of base. NB: Tree contractor/park staff to subsequently report any structural defects found during these works to tree consultant (I). | 1. Tree Contractor/ park staff | 1. High |
| T3 | Common Ash | 1. Remove tree due to identified increased risk of failure. | 1. Tree Contractor | 1. Moderate |
| T4 | Common Ash | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T5 | Wych Elm | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T6 | Common Ash | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T7 | Common Ash | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T16 | Scots Pine | 1. Remove Ivy to prevent establishment and monitor base of tree for incipient signs of failure when carrying out routine tasks around site and following extreme weather events. | 1. Park Staff | 1. Moderate |
| T18 | Scots Pine | Options:<br>1. Prune tree to remove broken branches and reduce canopy by 3m on east side and corresponding amounts to remainder of canopy to balance form due to identified increased risk of failure and unacceptable risk of harm to persons; or<br>2. Remove tree due to identified increased risk of failure and unacceptable risk of harm to persons. | 1. Tree Contractor<br>2. Tree Contractor | 1. High |
| T20 | Scots Pine | 1. Cut vertical decking panel further to allow for future incremental buttress growth (M). | 1. Park Staff | 1. Moderate |
| T21 | Atlas Cedar | 1. Prune tertiary branches <50mm diameter to attain approximately 4m clearance over internal road (M). | 1. Tree Contractor | 1. Low |
| T24 | Downy Birch | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of damage to property. | 1. Tree Contractor | 1. High |
| T25 | Common Horse Chestnut | 1. Prune lower canopy over building to attain a 1m clearance from roof (M). | 1. Tree Contractor | 1. Low |

Table continued overleaf

**Table 2: Tree Work Recommendations (continued):**

| No. | Species | Management Works Recommended* | Responsible Professional | Work Priority |
|---|---|---|---|---|
| T26 | Sycamore | 1. Remove Ivy from stem to allow future detailed inspections (and immediately prior to next cyclical inspection) and monitor branch union for incipient signs of failure when carrying out routine tasks around site and following extreme weather events (I). | 1. Park Staff | 1. Low |
| T28 | Scots Pine | 1. Remove Ivy from stem to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| T30 | Scots Pine | 1. Remove Ivy from stem to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| T32 | Common Ash | 1. Remove tree due to likelihood of further projected decline, and subsequent increased risk of failure. | 1. Tree Contractor | 1. Moderate |
| T35 | Common Ash | 1. Remove tree in accordance with good management practice due to its projected continued decline as a result of effects of ADD (M). | 1. Tree Contractor | 1. Moderate |
| T36 | Goat Willow | Options:<br>1. Remove tree and replace with tree of more suitable size and species; or<br>2. Continue cyclical pruning of canopy to maintain at current size. (M). | 1. Tree Contractor<br>2. Tree Contractor | 1. Moderate |
| T38 | Common Ash | 1. Clear fallen tree to prevent potential blockage of watercourse (M). | 1. Tree Contractor | 1. High |
| T40 | Wych Elm | 1. Coppice tree at approximately 1m height due to identified risk of stem failure onto adjacent targets and subsequent unacceptable risk of damage to property. | 1. Tree Contractor | 1. High |
| T43 | Wych Elm | 1. Remove tree, or pollard above first main union, due to identified risk of stem failure onto adjacent caravan and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T44 | Common Ash | 1. Remove tree due to projected increase in failure risk on further decline. | 1. Tree Contractor | 1. Moderate |
| T45 | Common Ash | 1. Clear vegetation immediately adjacent to stem to allow main union to be viewed from road (I). | 1. Park Staff | 1. High |
| T46 | Common Ash | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T47 | Sycamore | 1. Clear fallen tree to prevent potential blockage of watercourse (M). | 1. Tree Contractor | 1. High |
| T48 | Goat Willow | 1. Remove tree due to its projected continued decline, increased risk of failure and subsequent increased risk of harm to persons. | 1. Tree Contractor | 1. Moderate |
| T49 | Sycamore | 1. Remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| T52 | Norway Spruce | 1. Prune canopy back from adjacent property (M). | 1. Park Staff | 1. Low |
| T54 | Silver Birch | 1. Continue to provide clearance for incremental stem growth. | 1. Park Staff | 1. Low |
| G1 | Mixed Species | 1. Consider implementation of general silvicultural management works to ensure future quality of group, and subsequently reduce potential for hazards to develop, including: thinning, removal of Ash showing symptoms of ADD, removal of redundant tree stakes, guards and ties, formative pruning to prevent formation of poor structure, and removal/coppicing of Willow to prevent them becoming dominant (M). | 1. Client | 1. Moderate |

**Table 2: Tree Work Recommendations (continued):**

| No. | Species | Management Works Recommended* | Responsible Professional | Work Priority |
|---|---|---|---|---|
| G2 | Mixed Species | 1. Consider implementation of general silvicultural management works to ensure future quality of group, and subsequently reduce potential for hazards to develop, including: thinning, removal of Ashes showing symptoms of ADD, removal of redundant tree stakes, guards and ties, formative pruning to prevent formation of poor structure, and removal/ coppicing of Willow to prevent them becoming dominant (M). | 1. Client | 1. Moderate |
| G3 | Common Ash | 1. Remove group due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. High |
| G4 | Common Ash | 1. Sever and remove Ivy from ground level to approximately 2m height (or above primary unions where applicable). | 1. Tree Contractor | 1. High |
| G6 | Mixed Broadleaf | 1. Sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| G7 | Mixed Broadleaf | 1. Sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I).<br>2. Prune Alder canopy to provide 1m clearance from caravan (M). | 1. Park Staff<br>2. Tree Contractor | 1. Low<br>2. Low |
| G8 | Mixed Species | 1. Prune canopies of Lawson Cypresses to attain a 750mm clearance from adjacent caravan roof (M). | 1. Tree Contractor | 1. Moderate |
| G10 | Mixed Species | 1. Sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| G11 | Mixed Species | 1. Clear basal growth and Ivy from applicable stems prior to next cyclical inspection (I). | 1. Park Staff | 1. Low |
| G14 | Downy Birch | 1. Sever and remove Ivy from applicable trees ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| G17 | Downy Birch | 1. Arrange for climbing arboriculturist undertake aerial inspection of wound when next on site and report findings to tree consultant. | 1. Client | 1. Low |
| G20 | Mixed Broadleaf | 1. Sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I). | 1. Park Staff | 1. Low |
| G22 | Mixed Species | 1. Consider removal of Goat Willow due to increased risk of stem failure and limited potential for future growth (M).<br>2. Consider removal of two attenuated branches on Yew due to increased risk of failure. | 1. Client<br>2. Client | 1. Low<br>2. Low |
| G23 | Mixed Species | 1. Sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections.<br>2. Consider removal of Wild Cherry due to proximity to caravan and limited future potential due to suppression by adjacent Goat Willow.<br>3. Reduce Goat Willow canopy to provide clearance from building (M). | 1. Park Staff<br>2. Client<br>3. Tree Contractor | 1. Low<br>2. Low<br>3. Low |

**Table 2: Tree Work Recommendations (continued):**

| No. | Species | Management Works Recommended* | Responsible Professional | Work Priority |
|---|---|---|---|---|
| G24 | Mixed Species | 1. Remove fallen failed tree (M). | 1. Park Staff | 1. Low |
| G27 | Mixed Species | 1. Coppice stems at ground level in order to encourage regeneration into hedgerow (M). | 1. Tree or Landscape Contractor | 1. Moderate |
| G29 | Mixed Species | 1. Consider management of hedge through cutting, laying and infill planting with Hawthorn whips where appropriate, in order to return to managed hedgerow. | 1. Client | 1. Low |
| G30 | Hawthorn | 1. Coppice stems at ground level in order to encourage regeneration into hedgerow (M). | 1. Tree Contractor | 1. Low |
| G31 | Mixed Species | 1. Sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I).<br>2. Remove dead Cherry due to identified increased risk of failure.<br>3. Consider removal of Cypress south of property 17 due to limited potential for future growth. | 1. Park Staff<br>2. Tree Contractor<br>3. Client | 1. Low<br>2. Moderate<br>3. Low |
| G32 | Mixed Species | 1. Prune to remove deadwood >50mm diameter in Larch (M).<br>2. Remove dead Elm trees due to increased likelihood of subsequent decline and failure. | 1. Tree Contractor<br>2. Tree Contractor | 1. Low<br>2. Low |
| G33 | Common Ash | 1. Remove remaining tree of group due to projected increase in failure risk on further decline. | 1. Tree Contractor | 1. Moderate |
| G34 | Mixed Species | 1. Sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I).<br>2. Prune trees' canopies to obtain a 1m clearance from caravan roof (M).<br>3. Remove Purple Plum due to projected continued decline and subsequent projected increase in failure risk. | 1. Park Staff<br>2. Tree Contractor<br>3. Tree Contractor | 1. Low<br>2. Low<br>3. Low |
| G35 | Mixed Species | 1. Prune Norway Spruce to attain approximately 0.5m to adjacent caravan roof (M). | 1. Tree Contractor | 1. Low |
| G36 | Mixed Species | 1. Remove group due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | 1. Tree Contractor | 1. H |
| W1 | Mixed Species | 1. Consider management of hedge through cutting, laying and infill planting with Hawthorn whips where appropriate, in order to return to managed hedgerow.<br>2. Identify and remove Ash that are succumbing to ADD and Elm succumbing to DED, due to projected increase in failure risk on further decline (M). | 1. Client<br>2. Tree Contractor | 1. Low<br>2. Moderate |
| W2 | Mixed Species | 1. Sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections. NB: Park staff to subsequently report any structural defects found during these works to tree consultant (I).<br>2. Identify and remove Ash that are succumbing to ADD, in accordance with good management practice, due to their projected continued decline (M). | 1. Park Staff<br>2. Tree Contractor | 1. Low<br>2. Moderate |

Table continued overleaf

**Table 2: Tree Work Recommendations (continued):**

| No. | Species | Management Works Recommended* | Responsible Professional | Work Priority |
|---|---|---|---|---|
| W3 | Mixed Species | 1. Sever Ivy around stem circumferences at ground level and remove to a height of 1.5m. NB: Park staff to subsequently report any structural defects found during these works to tree consultant (I).<br>2. Tree contractor to identify and remove Ash succumbing to ADD due to projected increase in failure risk on further decline (M). | 1. Park Staff<br>2. Tree Contractor | 1. Low<br>2. Moderate |
| W4 | Mixed Species | 1. Remove dead Cherry to centre of group due to increased likelihood of failure. | 1. Tree Contractor | 1. Low |

*Note: it shall be the client's responsibility to arrange contact with the applicable council's planning department to check for any statutory tree protection, and obtain any necessary permissions if required, prior to scheduling or carrying out any tree works

4.12 Table 3, below, details the trees that are recommended for more detailed inspections for risk management related reasons following any works recommended in Table 2, along with their accompanying re-inspection schedule.

**Table 3: Tree Re-Inspection Recommendations:**

| No. | Species | Re-Inspection Recommendations* | When? |
|---|---|---|---|
| T23 | Common Alder | 1. Re-inspect when in full leaf to appraise canopy condition. | 1. Summer 2026 |
| G4 | Common Ash | 1. Re-inspect when in full leaf and Ivy is severed to appraise structural and canopy condition. | 1. Summer 2026 |
| G 11 | Common Ash | 1. Re-inspect when in full leaf to appraise canopy condition. | 1. Summer 2026 |

*Note: Unless otherwise specified, all inspections detailed in Table 3 are to be carried out by the project tree consultant upon instruction by the client

4.13 With regard to the above it is noted that, where trees are recommended for removal, whether for risk management purposes or for other arboricultural management reasons, then it is strongly recommended that replacement trees of suitable sizes and species be planted in appropriate locations of the site, both in order to compensate for the loss of the multiple benefits the trees provided to the environment, and to help ensure continuity of canopy cover in the local area. Accordingly, new tree planting advice should be sought from the project tree consultant.

4.14 Subsequently, any new tree planting should be carried out in strict accordance with BS8545:2014 that they are of a suitable quality for usage, and that they are provided with adequate care and maintenance following planting for them to successfully establish and, over the long term, grow to maturity.

4.15 Furthermore, where trees are recommended for removal for either risk management purposes or general arboricultural management reasons, where practicable to do so, stems and branches should be retained, in the interests of benefiting biodiversity, as standing and fallen deadwood of habitat value at suitable heights and in appropriate locations.

4.16 Furthermore, areas of Himalayan Balsam were identified in the areas along the banking Bashall Brook within the boundaries of the site area. As such, it is strongly recommended that the client investigates and begins a programme of eradication to prevent the spread of this invasive species and, in turn, potentially into other parts of the wider environment and onto neighbouring areas of land.

## 5. GENERAL TREE MANAGEMENT COMMENTS

5.1 During the course of the survey, it was noted that the canopies of a number of the trees border Edisford Road. In this respect it is generally accepted that the minimum clearances should be approximately 2.5 metres over a footpath and 5.05 metres over a road carriageway which, in turn, should give sufficient clearance for a person with a raised umbrella to walk unimpeded along a footpath and for a double-decker bus to travel along a road without striking any overhanging branches. Furthermore, adequate clearance should be maintained to visibility splays from junctions and accesses and also to road signs and street lights.

5.2 Additionally, it was noted that the canopies of various trees overhang access driveways. As such, it is recommended that general periodic maintenance pruning should be undertaken as and when necessary to ensure adequate canopy clearances are maintained to roads, footways and internal accesses and any overhead utilities such as overhead telephone lines.

## 6. TREE RISK MANAGEMENT STRATEGY RECOMMENDATIONS

6.1 In consideration of the high usage of various areas within the site, in particular static caravans that are under permanent occupancy, as well as the moderately high usage Edisford Road, and the associated identified targets such as moving vehicles and their occupants and pedestrians, it is subsequently recommended that all of the retained trees be re-inspected on a cyclical programme of roughly every 18 months, so that they can be alternately viewed whilst in and out of leaf in order to monitor both their structural and physiological condition and, consequently, for the site occupiers to meet their duty of care. In this respect it is therefore recommended that the trees be re-inspected during summer 2027.

6.2 Additionally, it is strongly recommended that the client undertakes a walkover check of trees around the site following any inclement weather events, and observes the trees during their day to day activities and routines. This is recommended to identify any obvious risk features, such as broken, split or hanging branches, root-plate heave, the apparition of fungal fruiting bodies etc. that could have occurred following inclement weather, and, if subsequently identified as necessary, to then seek appropriate advice from a tree contractor or tree consultant.

Bowland Tree Consultancy Ltd

## DISCLAIMER

**Survey Limitations:** Unless otherwise stated all trees are viewed from ground level using non-invasive techniques. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or in areas of ground vegetation, cannot therefore be expected. All obvious defects, however, are reported. Where the QTRA Risk Index is calculated as Tolerable or Broadly Acceptable, but the tree(s) have not been adequately inspected (e.g. due to the presence of ivy and/or ground vegetation which impeded the inspection), then it is essential to follow the recommendations made in the Management Recommendations column and to have the applicable tree(s) re-inspected as recommended.

Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only. The level of detail of the survey is as per the brief detailed on the Tree Survey Schedule and as per the specifics set out in the associated fee estimate for the project.

Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regards tree structural integrity and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potentially unacceptable risk to persons and/or property has been identified during our survey. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will first attempt to inform the site occupier of the issues and, if not possible, then inform the relevant Council. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

The potential influence of trees upon existing or proposed buildings or other structures, resulting from the effects of their roots abstracting water from shrinkable load-bearing soils, is not considered herein.



**Third Parties:** Any disclosure of this document to a third party is subject to this disclaimer. The report was prepared by Bowland Tree Consultancy Ltd at the instruction of and for use by our client, as named. This report does not in any way constitute advice to any third party who is able to access it by any means. Bowland Tree Consultancy Ltd excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage arising from reliance on the contents of this report.

**Statutory Tree Protection:** It is the client's responsibility to check for the presence of any statutory tree protection measures, such as the site's location within a Conservation Area and/or the presence of any Tree Preservation Orders, directly with the applicable Council's planning department prior to scheduling or carrying out any tree works. In turn, it is also the client's responsibility to check for the need for a felling licence with the Forestry Commission prior to scheduling or carrying out any tree works. Bowland Tree Consultancy Ltd cannot be held responsible for any decisions made by the client to prune or remove trees where any such statutory protection exists.

**Liability:** This report was prepared for the sole use of 'The Client' and, where applicable, the client's 'Agent', in accordance with the agreement under which the services were instructed. No warranty, express or implied, is made as to the advice in this report or any other service provided by Bowland Tree Consultancy Ltd. This report may not be relied upon by any other party except the client or any third party for whom the report is intended without the prior written permission of Bowland Tree Consultancy Ltd. The content of this report is, at least in part, based upon information provided by secondary data sources and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by Bowland Tree Consultancy Ltd, unless otherwise stated in the report.

**Validity:** The findings and recommendations contained within this report are, providing its recommendations are observed and the site conditions are retained as per the date(s) of the survey, valid for a period of twelve months from the last survey date. This period of validity may be reduced should there be any changes in factors affecting both the surrounding environment and/or built structures in relative proximity to the trees. The condition of trees should be re-appraised directly, through a site survey, following major weather events such as storms, changes undertaken to the site's conditions, inclusive of demolition and/or ground works, or the removal of existing site vegetation, including trees.

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| **Client:** | Shireburne Park Ltd |
| **Brief:** | Carry out an individual tree survey within area specified by client, report on projected risk posed to persons and property, and make management recommendations where appropriate |

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| **Surveyor:** | Noah Singleton BSc(Hons) |
| **Survey Dates:** | 14 & 20 October 2025 |
| **Viewing Conditions:** | Overcast with heavy rain showers and moderate winds |
| **Job Reference:** | BTC3337 |



| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | Common Ash | EM | 13 | 1x300 1x300 1x300 (ms) | 9 | P/ MD | ▪ Multiple stems arise at ground level within hedgerow.<br>▪ Detailed basal and stem inspection obscured by dense Ivy extending into primary branches.<br>▪ High voltage overhead power line to south-west.<br>▪ Canopy fouling overhead telephone line and telephone pole located within canopy.<br>▪ Canopy colonised by Ash Dieback Disease (ADD) with remaining canopy falling into Class 3-4. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Dead and moribund stems and branches to approximately 120mm diameter. T = Vehicles and their occupants on adjacent Edisford Road. | 2 | 3 | 2 | N/A | 5K | H |
| T2 | Sycamore | M | 18 | 2x700 (ts) | 14 | M | ▪ Two stems arise at ground level.<br>▪ Dense Ivy restricting detailed inspection of buttresses and main stem.<br>▪ Moderately thin canopy and a moderate reduction in vitality.<br>▪ Deadwood to approximately 50mm diameter in upper canopy over road.<br>▪ No significant changes noted since 2022 survey. | ▪ Tree contractor/park staff to sever Ivy at ground level around stem circumference and strip Ivy from main stem to a height of approximately 1.5m in order to facilitate clear visual inspection of base. NB: Tree contractor/park staff to subsequently report any structural defects found during these works to tree consultant (I). | P = Deadwood to approximately 50mm diameter. T = Vehicles and occupants on public road. | 2 | 4 | 3 | 50% | 1M | H |
| T3 | Common Ash | SM | 12 | 1x200 2x180 (ms)# | 8 | P | ▪ Located behind bridge abutment.<br>▪ Canopy colonised by ADD with remaining canopy falling into Class 4.<br>▪ Canopy does not overhang road but tree is within falling distance of road | ▪ Tree contractor to remove tree due to identified increased risk of failure and increased risk of harm to persons. | P = Dead and moribund branches up to 100mm diameter. T = Vehicles and occupants on public road. | 2 | 4 | 3 | N/A | 500 K | M |

**HEADINGS & ABBREVIATIONS**

**NO.** TREE/GROUP REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE
**SPECIES:** COMMON NAME
**AGE:** Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE
**HEIGHT:** APPROXIMATELY 80% OF TREES ARE MEASURED USING AN ELECTRONIC CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES
**DIAMETER:** STEM DIAMETER MEASURED OR ESTIMATED AT A HEIGHT OF APPROXIMATELY 1.3 METRES
**CROWN SPREAD:** MEASURED OR ESTIMATED DIAMETER OF CROWN(S) AT THE WIDEST POINT
**VITALITY:** A MEASURE OF PHYSIOLOGICAL CONDITION WHEREBY D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, G = GOOD
**MANAGEMENT:** SUFFIXES: (M) = FOR GENERAL ARBORICULTURAL OR SILVICULTURAL MANAGEMENT; (S) = TO REMOVE OR REDUCE THE RISK OF DIRECT DAMAGE TO A FIXED STRUCTURE BY MEANS OF CIRCUMFERENTIAL ROOT, STEM OR BRANCH GROWTH; (I) = TO ENABLE THE TREE(S) TO BE INSPECTED FURTHER FOR RISK ASSESSMENT PURPOSES
**TARGET RANGE:** HIGHEST VALUE TARGET THAT THE MOST SIGNIFICANT PART LIKELY TO FAIL COULD STRIKE. RANGES 1-6. 1 = HIGH, 6 = LOW VALUE/OCCUPANCY
**RISK ASSESSMENT DESCRIPTION:** DESCRIPTION OF PART IDENTIFIED AS MOST LIKELY TO FAIL AND ASSOCIATED TARGET, ASSESSED IN ACCORDANCE WITH QTRA SYSTEM
**SIZE RANGE:** SIZE CATEGORY OF MOST SIGNIFICANT PART CONSIDERED LIKELY TO FAIL. - RANGES 1-4 WHEREBY 1 = LARGE, 4 = SMALL, P = PROPERTY
**P.O.F:** PROBABILITY OF FAILURE WITHIN 12 MONTHS. RANGES 1-7. 1 = HIGH, 7 = LOW
**REDUCED MASS %:** WHERE THE MASS OF A TREE OR BRANCH IS REDUCED BY DEGRADATION THE RISK INDEX IS MULTIPLIED TO REFLECT THE PERCENTAGE OF MASS REDUCTION
**RISK INDEX:** E.G. RISK INDEX 20 = RISK OF SIGNIFICANT HARM 1 IN 20,000. AN ADDITIONAL FIGURE, IN BRACKETS, MAY BE SUFFIXED 'T' REPRESENTING THE RATE OF MULTIPLE OCCUPATION OVER THE YEAR, E.G. 10(10T) REPRESENTS A RISK OF HARM 1/10,000 TO 10 OCCUPANTS OR AN EQUIVALENT MONETARY VALUE. SEE QTRA PRACTICE NOTE FOR MORE INFORMATION REGARDING COLOURS USED TO SIGNIFY RISK INDEX
**WORK PRIORITY:** H (HIGH) = TREE WORKS TO BE GIVEN IMMEDIATE CONSIDERATION. M (MODERATE) = TREE WORKS TO BE CARRIED OUT WITHIN 12 MONTHS OF SURVEY (TIMING MAY BE SPECIFIED IN MANAGEMENT RECOMMENDATIONS). L (LOW) = TREE WORKS THAT ARE NOT CONSIDERED ESSENTIAL FOR RISK MANAGEMENT PURPOSES, BUT ARE RECOMMENDED IN ACCORDANCE WITH PRUDENT ARBORICULTURAL MANAGEMENT (TO BE REVIEWED IN 12 MONTHS, OR SPECIFIED TIME, IF APPLICABLE). N/A = NOT APPLICABLE

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T4 | Common Ash | EM | 14 | 2x300 1x120 (ms) | 10 | MD | ▪ Dense Ivy to stems restricting detailed inspection.<br>▪ Tree located approximately 8m up bank in woodland and within falling distance of road.<br>▪ Canopy colonised by ADD with remaining canopy falling into Class 4. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Moribund stems and branches up to 250mm diameter. T = Vehicles and occupants on public road. | 2 | 3 | 2 | N/A | 5K | H |
| T5 | Wych Elm | SM | 12 | 2x260 1x200 (ms)# | 10 | D | ▪ Tree is evidently dead having succumbed to Dutch Elm Disease (DED). | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Stems at ground level. T = Vehicles and occupants on public road. | 2 | 3 | 2 | N/A | 5K | H |
| T6 | Common Ash | EM | 14 | 260 | 9 | D | ▪ Dense Ivy to stems restricting detailed inspection.<br>▪ Tree located approximately 4m up bank in woodland and within falling distance of road.<br>▪ Canopy colonised by ADD with remaining canopy falling into Classes 4. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Dead and moribund branches up to approximately 150mm diameter. T = Vehicles and occupants on public road. | 2 | 3 | 2 | N/A | 5K | H |
| T7 | Common Ash | M | 22 | 800 | 16 | P-MD | ▪ Dense Ivy to stems restricting detailed inspection.<br>▪ Tree located up bank in woodland and not access to inspect base.<br>▪ Canopy colonised by ADD with remaining canopy falling into Class 4. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Dead and moribund branches up to approximately 150mm diameter. T = Vehicles and occupants on public road. | 2 | 3 | 2 | N/A | 5K | H |
| T8 | Goat Willow | - | - | - | - | - | ▪ Tree has been removed. | ▪ N/A | - | - | - | - | - | - | - |
| T9 | Downy Birch | M | 19 | 560 | 14 | G | ▪ Incremental growth from ground level to approximately 1m height typical of mature species.<br>▪ Sounding with nylon mallet gave no significant indications of hollowing and no fungal fruiting bodies visible at time of survey. | ▪ Tree consultant to monitor tree's structural and physiological condition as component of future cyclical inspections. | P = Stem at ground level. T = Persons occupying adjacent caravans. | 1 | 1 | 6 | N/A | 500 K | L |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T10 | Common Alder | EM/M | 16 | 390 | 9 | M | ▪ Canopy moderately-highly biased west, possibly due to previous removal of tree to east. | ▪ N/A | P = Deadwood to approximately 25mm diameter. T = Persons using garden adjacent to caravan. | 3 | 4 | 3 | 25% | <1M | N/A |
| T11 | Common Alder | - | - | - | - | - | ▪ Tree has been removed. | ▪ N/A | - | - | - | - | - | - | - |
| T12 | Common Ash | M | 5 | 900 | 3 | D | ▪ Tree has been removed, retaining stem at a height of approximately 5m following recommendations from 2022 survey. | ▪ N/A | - | - | - | - | - | <1M | - |
| T13 | Common Beech | - | - | 1020 | - | - | ▪ Stem has failed at ground level and fallen to east.<br>▪ Failure has led to opening in canopy of W1. | ▪ N/A | - | - | - | - | - | - | - |
| T14 | Goat Willow | EM | 16 | 460 | 12 | M | ▪ Some secondary roots exposed to south-west, evidently due to erosion of soil by persons using footpath into wooded area.<br>▪ Stem bifurcates at a height of approximately 2.5m.<br>▪ Decking evidently amended since previously survey and now located approximately 400mm from stem. | ▪ N/A | P = Deadwood to approximately 75mm diameter. T = Persons using decking below tree's canopy. | 2 | 4 | 3 | 50% | 1M | N/A |
| T15 | Norway Spruce | - | - | - | - | - | ▪ Tree has been removed. | ▪ N/A | - | - | - | - | - | - | - |
| T16 | Scots Pine | M | 19 | 790 | 18 | G | ▪ Occluding wood and increment strip to north and south at ground level around eastern side of stem, possibly indicating presence of dysfunctional wood.<br>▪ Multiple primary branches arise from stem at a height of approximately 5m.<br>▪ Moderately attenuated branch arises to north of approximately 280mm diameter at 6m.<br>▪ No significant changes since previous survey, but moderate Ivy obscuring more of the stem<br>▪ Despite Ivy cover incremental growth to north and south of stem evident. | ▪ Park staff to remove Ivy and monitor base of tree for incipient signs of failure when carrying out routine tasks around site and following extreme weather events.<br>▪ Tree consultant to monitor incremental growth at base of tree as a component of subsequent cyclical inspections. | P = Branch of approximately 280mm diameter at 6m height. T = Persons occupying caravan below canopy. | 1 | 2 | 5 | N/A | 100 K | M |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T17 | Goat Willow | M | 16 | 1x300<br>1x270<br>1x250<br>(ms) | 14 | G | ▪ Stem trifurcates at a height of approximately 500mm with wide unions.<br>▪ Canopy evidently pruned to reduce height and spread. | ▪ N/A | P = Branches to approximately 100mm diameter.<br>T = Persons using garden area below. | 2 | 4 | 5 | N/A | <1M | N/A |
| T18 | Scots Pine | M | 20 | 600 | 14 | G | ▪ Dense Ivy from 0-8m height.<br>▪ Stem located approximately 0.5m distance from caravan decking to north-west.<br>▪ Tree has sustained upper canopy branch failure at approximately 16m height of 160mm diameter.<br>▪ Branch of same diameter immediately below has part failed and has twisted down onto branch below that.<br>▪ Significantly altered canopy exposure on east side.<br>▪ Canopy has wide spreading form with one attenuated branch of approximately 180mm diameter to east remaining over road.<br>▪ Pruning would largely detract from overall amenity value. | Option 1:<br>▪ Tree contractor to prune tree to remove broken branches and reduce canopy by 3m on east side and corresponding amounts to remainder of canopy to balance form due to identified increased risk of failure and unacceptable risk of harm to persons; or<br>Option 2:<br>▪ Tree contractor to remove tree due to identified increased risk of failure and unacceptable risk of harm to persons. | P = Broken branch of approximately 180mm.<br>T = Persons using internal road below. | 2 | 3 | 2 | N/A | 5K | H |
| T19 | Scots Pine | M | 18 | 560 | 14 | G | ▪ Stem curvature at a height of approximately 2m to south, before correcting at approximately 5m.<br>▪ Moderate Ivy cover from 0-6m height.<br>▪ Deadwood in canopy to approximately 75mm diameter. | ▪ N/A | P = Deadwood to approximately 75mm diameter.<br>T = Persons using adjacent road internal to caravan park. | 2 | 4 | 3 | 25% | <1M | N/A |
| T20 | Scots Pine | M | 20 | 540 | 10 | G | ▪ Mechanical wound at approximately 300mm height of approximately 150mm diameter on east side.<br>▪ Vertical decking panels beginning to touch southern buttress.<br>▪ Approximately 1m long, 150mm wide secondary stem stub at 7m height. | ▪ Park staff to cut vertical decking panel further to allow for future incremental buttress growth (M).<br>▪ Tree consultant to monitor tree's structural and physiological condition as component of future cyclical inspections. | P = 150mm diameter secondary stem stub<br>T = Persons adjacent to decking | 2 | 3 | 4 | N/A | 500 K | M |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T21 | Atlas Cedar | M | 25 | 1230 | 26 | M | ▪ Hard surfacing within large area of root-zone, with historic damage to buttresses evident from previous works to create hard surfaced roadways.<br>▪ Largely occluded wounds of previous branch removals at a height of approximately 500mm height up to 3m height and of approximately 250mm diameter.<br>▪ Canopy showing a slight reduction in vitality with thinning of foliage, possibly indicative of Needle Blight *(Sirococcus tsugae)*<br>▪ Minor amount of deadwood to approximately 60mm diameter.<br>▪ Canopy overhangs car parking area to south-east and slightly low over road. | ▪ Tree contractor to prune tertiary branches <50mm diameter to attain approximately 4m clearance over internal access road (M). | P = Deadwood to approximately 60mm diameter. T= Pedestrians using footpaths and roads internal to caravan park. | 2 | 4 | 5 | 50% | <1M | L |
| T22 | Scots Pine | M | 21 | 490 | 9 | M | ▪ Moderately sparse canopy.<br>▪ Caravan previously installed approximately 1m distance east with possible root damage from works.<br>▪ Canopy moderately highly biased north-west with possible altered exposure on east side from removed trees.<br>▪ One piece of 60mm deadwood in north of canopy. | ▪ N/A | P = Deadwood up to approximately 60mm diameter. T = Persons using drive. | 4 | 4 | 2 | 50% | <1M | N/A |
| T23 | Common Alder | EM/ M | 16 | 490 | 15 | M/P | ▪ Ground levels noted to have been altered in 2019 and rooting area now covered with sealed hard surfacing up to stem base.<br>▪ Machinery damage to bark of approximately 300mm length and 75mm width on north-east side of stem just above ground level.<br>▪ Canopy showing a moderately significant reduction in vitality, however has not changed significantly since previous 2022 survey. | ▪ Tree consultant to review physiological condition when in full leaf (i.e. Summer 2026) and make subsequent recommendations if appropriate. | P = Deadwood up to approximately 50mm diameter. T = Persons accessing caravans. | 3 | 4 | 2 | 50% | 1M | M |
| T24 | Downy Birch | EM | 4.5 | 340 | 1 | D | ▪ Evidently dead with fruiting bodies of Silver Leaf fungus *(Chondrostereum purpureum)*.<br>▪ Evidently topped at approximately 4.5m height. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of damage to property. | P = Stem at ground level. T = Caravan located to south. | 3 | P | 2 | N/A | 3K | H |

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| T25 | Common Horse Chestnut | M | 18.5 | 1060 | 17 | G | ▪ Stem approximately 3m from single-storey building to east.<br>▪ Stem bifurcates at a height of approximately 2m.<br>▪ Largely occluded cavity from previous branch loss on limb to east at a height of approximately 1.7m, with cavity opening approximately 200m long, 40mm wide and 300mm deep.<br>▪ Wound on north side of western stem at a height of approximately 2.5m and of approximately 1m length and 50mm width.<br>▪ Some exudates close to wound however healthy occluding growth around wound present.<br>▪ Lower canopy in contact with roof of building to east.<br>▪ Minor deadwood throughout canopy to approximately 50mm diameter. | ▪ Tree contractor to prune lower canopy over building to attain approximately 1m clearance from roof (M).<br>▪ Tree consultant to monitor decay cavity around previously lost limb for further decay encroachment as a component of subsequent programme of inspections. | P = Deadwood to approximately 50mm diameter. T = Pedestrians using footpaths below tree's canopy. | 3 | 4 | 3 | 25% | <1M | L |
| T26 | Sycamore | M | 18.5 | 770 | 14. | G | ▪ Stem bifurcates at a height of approximately 1.5m with tight union, with included bark extending to a height of approximately 3m, where two stems of approximately 450mm diameter arise.<br>▪ Adaptive growth noted to either side of union and crossing branches in higher canopy providing some natural bracing.<br>▪ Canopy previously raised to a height of approximately 6m to provide clearance to caravans below.<br>▪ Dense Ivy cover up to 6m height obscuring union. | ▪ Park staff to remove Ivy from stem to allow future detailed inspections (and immediately prior to next cyclical inspection) and monitor branch union for incipient signs of failure when carrying out routine tasks around site and following extreme weather events (I).<br>▪ Tree consultant to monitor tight unions for incipient signs of failure, as a component of subsequent programme of inspections. | P = Primary stem/branch >460mm diameter at main bifurcation point. T = Persons occupying neighbouring caravan. | 1 | 1 | 5 | N/A | 40K | L |
| T27 | Scots Pine | M | 18 | 540 | 10 | G | ▪ Cable running from north-east to north-west of tree approximately 2m north of stem.<br>▪ Unclear if excavation has occurred within RPA or if run is following direction of existing drainage.<br>▪ Branch arising to east at a height of approximately 5m previously reduced in length to reduce lever arm on slightly tight union. | ▪ Tree consultant to monitor physiological condition of tree, as a component of subsequent programme of inspections. | P = Deadwood to approximately 25mm diameter. T = Residents using gardens adjacent to caravans. | 3 | 4 | 3 | 25% | <1M | N/A |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T28 | Scots Pine | M | 17.5 | 720 | 14 | G | ▪ Secondary branch of approximately 300mm diameter to south-east removed subsequent to previous survey recommendations.<br>▪ Moderately dense Ivy to approximately 7m height. | ▪ Park staff to remove Ivy from stem to allow future detailed inspections (I). | P = Deadwood to approximately 25mm diameter. T = Persons using gardens adjacent to caravans. | 3 | 4 | 2 | 25% | <1M | L |
| T29 | Sycamore | M | 17 | 680 | 14 | M | ▪ Located within garden area adjacent to caravan with stem in close proximity to wall.<br>▪ Multiple primary branches arise at a height of approximately 4.5m.<br>▪ Canopy previously raised to a height of approximately 6m with small diameter re-growth at branch stubs. | ▪ N/A | P = Deadwood to approximately 25mm diameter. T = Persons using garden adjacent to caravan. | 2 | 4 | 3 | 25% | <1M | N/A |
| T30 | Scots Pine | M | 11 | 510 | 11.5 | G | ▪ Base partially obscured by hedgerow, thereby restricting inspection, and dense Ivy starting at base.<br>▪ Number of deadwood stubs of approximately 150mm diameter to north and south of canopy. | ▪ Park staff to remove Ivy from stem to allow future detailed inspections (I). | P = Deadwood stub of approximately 150mm diameter. T = Persons using gardens adjacent to tree. | 4 | 3 | 3 | N/A | <1M | L |
| T31 | Sycamore | EM | 15 | 2x290 (ts) | 10 | G | ▪ Twin stemmed from ground level.<br>▪ No significant visible defects. | ▪ N/A | P = Deadwood up to approximately 25mm diameter. T = Persons using gardens adjacent to caravans. | 3 | 4 | 3 | 25% | <1M | N/A |
| T32 | Common Ash | SM | 17 | 2x180 (ts) | 7 | M/P | ▪ Tree stands 5.5m distance from propane tank.<br>▪ Twin stemmed from ground level with dense Ivy.<br>▪ Canopy colonised by ADD with remaining canopy falling into Classes 3-4. | ▪ Tree contractor to remove tree due to likelihood of further projected decline, and subsequent increased risk of failure. | P = Dead and moribund branches up to 100mm diameter. T = Persons accessing parking area. | 4 | 4 | 1 | N/A | 500 K | M |
| T33 | Goat Willow | - | - | - | - | - | ▪ Tree has evidently been removed. | ▪ N/A | - | - | - | - | - | - | - |

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| **Survey Dates:** | 14 & 20 October 2025 |
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| **Job Reference:** | BTC3337 |



| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T34 | Common Ash | EM | 15 | 1x350 1x280 (ts)# | 12 | M/P | ▪ Located beyond fence in river bank in young Elm and Hawthorn scrub, and stem base subsequently not accessed.<br>▪ Canopy colonised by ADD with remaining canopy falling into Classes 1-2.<br>▪ Stems topped at approximately 5m height. | ▪ N/A | P = Dead and moribund branches up to 100mm diameter.<br>T = Persons using garden areas. | 3 | 4 | 2 | N/A | 500 K | N/A |
| T35 | Common Ash | EM | 14 | 320 | 10 | M | ▪ Located adjacent to stump of previously removed Cypress to north.<br>▪ Necrotic bark strip on north-east of stem from ground level to a height of approximately 1.7m.<br>▪ Moderate stem lean south-west from ground level over watercourse.<br>▪ Canopy colonised by ADD with remaining canopy falling into Classes 1/2. | ▪ Tree contractor to remove tree in accordance with good management practice due to its projected continued decline as a result of effects of ADD (M). | P = Moribund branches to approximately 50mm diameter.<br>T = Residents using garden adjacent to caravan. | 4 | 4 | 2 | N/A | <1M | M |
| T36 | Goat Willow | M | 13.5 | 1x510 1x500 1x400 (ms) | 14 | G | ▪ Stem trifurcates at a height of approximately 1.5m.<br>▪ Largely occluded 200mm diameter pruning wound from previous limb removal to north-west at a height of approximately 1m.<br>▪ Canopy evidently reduced with 1m long, 20mm diameter re-growth. | Option1 :<br>▪ Client to consider tree's removal and replacement with tree of more suitable size and species; or<br>Option 2:<br>▪ Tree contractor to continue cyclical pruning of canopy to maintain at current size. (M). | P = Primary branch of approximately 400mm diameter at main trifurcation point.<br>T = Persons occupying neighbouring caravan. | 1 | 1 | 6 | N/A | 400 K | M |
| T37 | Crab Apple | - | - | - | - | - | ▪ Informed by neighbouring resident that tree has recently been removed. | ▪ N/A | - | - | - | - | - | - | - |
| T38 | Common Ash | M | - | 450 | - | - | ▪ Tree has fallen west and now lying across river. | ▪ Tree contractor to clear fallen tree to prevent potential blockage of watercourse (M). | - | - | - | - | - | <1M | H |
| T39 | Common Oak | M | 22 | 900 | 18 | G | ▪ Located in wooded area and to north of last caravan on this level.<br>▪ Lowest branch to south of approximately 450mm diameter arises at 4m height.<br>▪ Old partially occluded branch stub approximately 4m from stem.<br>▪ Large diameter deadwood in inner canopy over evidently very low use wooded area. | ▪ N/A | P = Deadwood up to approximately 260mm diameter.<br>T = Persons accessing wooded area. | 5 | 2 | 5 | N/A | <1M | N/A |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T40 | Wych Elm | EM | 16 | 1x370 1x300 (ts) | 12 | G | ▪ Stem bifurcates at height of approximately 1m with a tight included bark union.<br>▪ Significant decay cavity from ground level to a height of approximately 1m and a depth of 200mm from previous stem tear-out. | ▪ Tree contractor to coppice tree at approximately 1m height due to identified risk of stem failure onto adjacent targets and subsequent unacceptable risk of damage to property. | P = Stems of approximately 300mm diameter.<br>T = Vehicles parked adjacent to tree. | 3 | P | 2 | N/A | 3K | H |
| T41 | Wych Elm | EM | 17 | 1x440 1x210 (ts) | 12 | G | ▪ Multiple stems between 0.5 and 1.6m height with very tight included bark unions. | ▪ Tree consultant to monitor tight unions for incipient signs of failure, as a component of subsequent programme of inspections. | P = Stems up to 300mm diameter at 1.6m height.<br>T = Persons using garden areas. | 3 | 2 | 4 | N/A | 1M | L |
| T42 | Norway Spruce | M | 21 | 460 | 5 | G | ▪ Several secondary roots severed on south-east side up to 60mm diameter.<br>▪ Canopy displaying good vitality and several further large diameter roots to north and west evidently undamaged. | ▪ Tree consultant to monitor structural and physiological condition as a component of subsequent programme of inspections. | P = Stem at ground level.<br>T = Persons occupying caravans. | 1 | 2 | 5 | N/A | 100 K | L |
| T43 | Wych Elm | M | 17 | 600 | 14 | G | ▪ Unable to access base and stem to inspect in detail due to dense undergrowth.<br>▪ Moderate stem lean to south-west from ground level.<br>▪ Stem bifurcates at a height of approximately 3m with a tight included union, with staining and exudates between stems.<br>▪ Canopy highly biased to south-west over adjacent caravans.<br>▪ Tree highly susceptible to colonisation by DED. | ▪ Tree contractor to either remove tree, or pollard above first main union, due to identified risk of stem failure onto adjacent caravan and subsequent unacceptable risk of harm to persons. | P = Primary branch of approximately 300mm diameter.<br>T = Persons occupying adjacent caravan. | 1 | 2 | 4 | N/A | 10K | H |
| T44 | Common Ash | SM | 12 | 190 | 3 | P | ▪ Stem located in wood immediately north of lamp post, and within falling distance of road.<br>▪ Canopy colonised by ADD with remaining canopy falling into Classes 4. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent increased risk of harm to persons. | P = Stem at ground level.<br>T = Persons using internal access road. | 3 | 3 | 2 | N/A | 50K | M |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T45 | Common Ash | M | 23 | 1x570 1x520 (ts) | 18 | M | ▪ Stem bifurcates at a height of approximately 300mm with a tight union.<br>▪ Shrub undergrowth growing close to main stem.<br>▪ Stem arising to south-east has a moderate stem lean to south-east.<br>▪ Canopy colonised by ADD with remaining canopy falling into Class 2-3.<br>▪ Deadwood to approximately 150mm diameter over road.<br>▪ Several partially occluded wounds on lower stem to 1m height possibly associated with colonisation by ADD, but no necrotic bark able to be peeled off and no evidence of decay fungi colonisation. | ▪ Park staff to clear vegetation immediately adjacent to stem to allow main union to be viewed from road (I).<br>▪ Park staff to monitor union for incipient signs of failure when carrying out routine tasks around site and following extreme weather events.<br>▪ Tree consultant to be instructed by client to review structural and physiological condition during summer 2026 (i.e. when in full leaf) and make subsequent management recommendations. | P = Deadwood to approximately 150mm diameter. T = Pedestrians using adjacent internal road to caravan park. | 3 | 3 | 2 | N/A | 50K | H |
| T46 | Common Ash | EM | 16 | 410 | 11 | MD | ▪ Basal lesions present on stem.<br>▪ Canopy colonised by ADD with remaining canopy falling into Class 3.<br>▪ Colonised by *Pholiota aurivella* to south of stem along 1m high area of dysfunctional wood. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Stem at ground level. T = Parked vehicles adjacent to tree. | 3 | P | 2 | N/A | 3K | H |
| T47 | Sycamore | M | N/A | 850 | 14 | D | ▪ Tree has failed out of bank to west over river with potential to block water course. | ▪ Tree contractor to clear fallen tree to prevent potential blockage of watercourse (M). | N/A | - | - | - | - | <1M | H |
| T48 | Goat Willow | SM | 7.5 | 1x270 3x250 (ms) | 6 | MD | ▪ Located within hedge along road.<br>▪ Multi-stemmed from approximately 1m height with all but northern-most stem largely dead. | ▪ Tree contractor to remove tree due to its projected continued decline, increased risk of failure and subsequent increased risk of harm to persons. | P = Deadwood up to approximately 120mm diameter. T = Vehicles and occupants along adjacent road. | 2 | 3 | 3 | N/A | 50K | M |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T49 | Sycamore | M | 17 | 770 | 13 | P | ▪ *Part of G05 in previous 2022 survey.*<br>▪ Located in centre of road.<br>▪ Colonisation by number of *Pleurotus ostreatus* fungal fruiting bodies to north of stem.<br>▪ Significantly poor canopy vitality.<br>▪ Sounding with nylon mallet indicates minor hollowing to north of stem at ground level.<br>▪ Partially occluded wound with evident internal decay to southern root.<br>▪ Southern significant branch stub at approximately 4m height is approximately 1.5m in length and has evident decay within.<br>▪ Minor stem lean south. | ▪ Tree contractor to remove tree due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Whole stem failure.<br>T = Persons using road to south. | 2 | 1 | 3 | N/A | 4K | H |
| T50 | Bird Cherry | SM | 20 | 380 | 7 | M/G | ▪ 200mm tall, 20mm wide partially occluded wound with evident decay to north of stem.<br>▪ Sounding with nylon mallet indicates minor hollowing between 0-0.5m height.<br>▪ Moderate stem lean north along woodland. | ▪ N/A | P = Whole stem failure.<br>T = Persons within woodland. | 5 | 2 | 4 | N/A | <1M | N/A |
| T51 | Unknown | SM | 10 | 280 | 6 | D | ▪ Standing dead stem south of the mature Ash with class 4 ADD located in woodland W1.<br>▪ Bark necrosis to east of stem base with evidence of minor decay.<br>▪ More likely to fall to east down steep slope into evidently low use area of woodland W1. | ▪ N/A | P = Whole stem failure.<br>T = Persons in woodland. | 6 | 2 | 3 | N/A | <1M | N/A |
| T52 | Norway Spruce | Y | 12 | 240 | 5.5 | G | ▪ Tree located to north-west of caravan.<br>▪ Canopy growing in close proximity to caravan.<br>▪ No significant risk features noted at time of survey. | ▪ Park staff to prune tree's canopy to attain suitable clearance from caravan (M). | P = Whole stem failure.<br>T = Adjacent caravan. | 6 | P | 7 | N/A | <1M | L |
| T53 | Silver Birch | SM | 12.5 | 380 | 7 | M/G | ▪ South of permanent caravan with loose stone drive immediately north of stem.<br>▪ Stem recently damaged at approximately 0.5m height to north of stem.<br>▪ Stem has minor lean north-east from approximately 2.5m height. | ▪ Tree consultant to monitor structural condition of tree as component of future cyclical inspections. | P = Whole stem failure at 0.5m height.<br>T = Caravan to north. | 2 | P | 6 | N/A | <1M | L |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T54 | Silver Birch | SM | 10 | 240# | 4.5 | G | ▪ Decking built around stem with decking cut around stem providing 10-20mm clearance.<br>▪ Stem base not accessed to inspect in detail. | ▪ Park staff to monitor stem growth and continue to provide clearance for incremental stem growth.<br>▪ Tree consultant to monitor vitality of tree as component of future cyclical inspections. | P = Whole stem failure.<br>T = Railing of decking to south. | 4 | P | 6 | N/A | <1M | L |
| T55 | Silver Birch | EM | 10 | 1x400<br>1x190<br>(ts) | 7 | M | ▪ Evidence building works occurred surrounding tree with evident mechanical damage to stem leaving multiple partially occluded wounds.<br>▪ Bare soft surfacing surrounding tree waterlogged during showers. | ▪ Tree consultant to monitor structural condition of tree as component of future cyclical inspections. | P = Whole stem failure.<br>T = Newly built caravans. | 2 | P | 4 | N/A | 30K | L |
| T56 | Broad-Leafed Lime | EM | 12.5 | 600 | 10 | M | ▪ Not in leaf when surveyed.<br>▪ Stem trifurcates at approximately 1.75 m height with tight unions.<br>▪ Relatively recent construction of 2m tall retaining wall approximately 3m south-east of tree likely to cause impact on tree vitality. | ▪ Tree consultant to monitor structural condition of tree as component of future cyclical inspections. | P = Stem failure of union.<br>T = Persons stood at top of retaining wall | 6 | 2 | 5 | N/A | <1M | L |
| G1 | Various species including, Ash, Birch, Field Maple, Larch, Scots Pine, Willow. | Y-SM | ≤ 10 | ≤ 270 | ≤ 6 | P-G | ▪ Himalayan Balsam present to north east.<br>▪ Closely spaced group of recent planting forming woodland area to edge of site.<br>▪ Ash has sustained moderate twig dieback associated with effects of colonisation by ADD.<br>▪ Number of trees still have redundant guards, ties and stakes, which are beginning to damage stems.<br>▪ Occasional Ash colonised by ADD with remaining canopy cover falling into Classes 3-4. | ▪ Client to consider implementation of general silvicultural management works to ensure future quality of group, and subsequently reduce potential for hazards to develop, including: thinning, removal of Ashes showing symptoms of ADD, removal of redundant tree stakes, guards and ties, formative pruning to prevent formation of poor structure, and removal/ coppicing of Willow to prevent them becoming dominant (M). | P = Deadwood to approximately 50mm diameter.<br>T = Utility building to north-east of group. | 5 | P | 5 | N/A | <1M | M |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G2 | Various species including, Ash, Birch, Field Maple, Larch, Scots Pine, Willow | Y-SM | ≤ 14 | ≤ 360 | ≤ 8 | G | ▪ Closely spaced group of relatively recent planting forming woodland area to edge of site.<br>▪ Ash within group suffering moderate twig die back associated with ADD.<br>▪ Number of trees still have redundant guards, ties and stakes which are beginning to damage stems.<br>▪ Small number of stems suspended in canopy of other trees along road edge to east of group.<br>▪ Occasional tree within group has partial root plate failure. | ▪ Client to consider implementation of general silvicultural management works to ensure future quality of group, and subsequently reduce potential for hazards to develop, including: thinning, removal of Ashes showing symptoms of ADD, removal of redundant tree stakes, guards and ties, formative pruning to prevent formation of poor structure, and removal/ coppicing of Willow to prevent them becoming dominant (M). | P = Deadwood to approximately 50mm diameter. T = Vehicles and occupants. | 2 | 4 | 3 | 25% | <1M | M |
| G3 | 2no. Common Ash | SM | ≤ 13 | ≤ 240 | ≤ 6 | MD | ▪ Located approximately 6m up bank from road within wooded area.<br>▪ Canopies colonised by ADD with remaining canopy falling into Class 4. | ▪ Tree contractor to remove group due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Dead and moribund stems up to approximately 240mm diameter. T = Vehicles and occupants. | 2 | 3 | 2 | N/A | 5K | H |
| G4 | 3no. Common Ash | M | 22 | 800 | 20 | M | ▪ Mature Ash in wider woodland.<br>▪ Individually recorded tree T7 is part of group but canopy is displaying more severe symptoms of ADD.<br>▪ Dense Ivy throughout group impeded inspection.<br>▪ Tree to north has evidently sustained 280mm diameter branch failure on east side at approximately 10m height.<br>▪ Two trees immediately adjacent to road and one further slightly further into woodland.<br>▪ Tree located to south-east has sustained an approximately 280mm diameter branch failure on west side at 2m height with some decay visible within Ivy and dense Holly. | ▪ Tree contractor to sever and remove Ivy from ground level to approximately 2m height (or above primary unions where applicable).<br>▪ Tree consultant to review group to appraise structural and physiological condition in early Summer 2026 (i.e. as soon as in full leaf) upon instruction from client following completion of Ivy removal. | P = Branches up to approximately 100mm diameter. T = Vehicles and occupants. | 2 | 4 | 2 | N/A | 50K | H |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G5 | 7no. Sycamore | M | ≤ 19 | ≤ 940 | ≤ 17 | M | ▪ Loosely spaced group with sealed and unsealed roads in root-zones.<br>▪ Damage to several buttresses, with some hollowing of those immediately adjacent to roadways where damage has occurred.<br>▪ Evidence of recent alterations to access roads within rooting area since previous survey.<br>▪ Tree to north of group has dysfunctional wood and hollowing of approximately 500mm width and 350mm height within buttress to south, although no further hollowing was detected when sounded with nylon mallet.<br>▪ Tree to centre north has wire in stem and possibly located on neighbouring land.<br>▪ Stem bifurcates at approximately 5m height with some bark necrosis around union, but no indications of progressive decay.<br>▪ Small amount deadwood up to approximately 100mm diameter.<br>▪ Second tree from east of group has multiple historic columns of bark dysfunction along partially occluded wounds of 20mm width. | ▪ Tree consultant to monitor applicable buttresses and associated roots for encroachment of hollowing as a component of subsequent programme of inspections and monitor physiological condition following ground works. | P = Deadwood to approximately 100mm diameter.<br>T = Persons using internal road to caravan park beneath canopies. | 2 | 4 | 2 | 25% | 200 K | L |
| G6 | 1no. Alder, 1no. Ash, | M | ≤ 16 | ≤ 620 | ≤ 14 | G | ▪ Group located in close proximity to gas tank.<br>▪ Dense Ivy to Ash stem and light Ivy to Alder stem, which impeded inspection in part.<br>▪ Deadwood to approximately 75mm diameter in canopy of Ash.<br>▪ Alder stem bifurcates at a height of approximately 2m with slightly tight union. | ▪ Park maintenance staff to sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I). | P = Deadwood to approximately 75mm diameter.<br>T = Persons using gardens adjacent to caravan. | 4 | 4 | 3 | 50% | <1M | L |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G7 | 2no. Alder, 1no. Birch, 1no. Spruce | M | ≤ 16 | ≤ 600 | ≤ 12 | M-G | ▪ Spruce and Alder to centre of group growing within shrubs restricting inspection of buttresses and stem to approximately 1.5m.<br>▪ Group has dense Ivy from 0-6m height impeding detailed inspection.<br>▪ General disturbance within rooting zones associated with use of areas as private gardens by occupants of adjacent residential caravans.<br>▪ Birch has root to south overtopping planting bed and evidently cracking paving.<br>▪ Alder canopy in close proximity to caravan. | ▪ Park maintenance staff to sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I).<br>▪ Tree contractor to prune Alder canopy to provide 1m clearance from caravan (M). | P = Deadwood to approximately 50mm diameter. T = Persons using gardens adjacent to caravans. | 3 | 4 | 3 | 25% | <1M | L |
| G8 | 10no. Lawson Cypress, 1no. Horse Chestnut. | EM | ≤ 15 | ≤ 370 | ≤ 7 | G | ▪ Horse Chestnut is twin-stemmed from ground level with northern stem having approximately 200mm wide partially occluded wound from 0-9m height with canopy not indicating signs of decline.<br>▪ Approximately four Lawson Cypress have multiple stems arising at ground level with tight unions.<br>▪ Canopies in contact with roof of neighbouring caravan to west. | ▪ Tree contractor to prune canopies of Lawson Cypresses to attain a 750mm clearance from adjacent caravan roof (M).<br>▪ Tree consultant to monitor physiological condition of Horse Chestnut as component of subsequent programme of inspections. | P = Stem of approximately 200mm diameter at included union. T = Adjacent caravan and occupants. | 2 | P | 6 | N/A | <1M | M |
| G9 | 3no. Common Alder | M | ≤ 17 | ≤ 560 | ≤ 12 | M | ▪ Area around caravan relatively recently landscaped with potential for root disturbance.<br>▪ Stem of tree to east bifurcates at a height of approximately 1m with wide union.<br>▪ Tree to west has a moderate stem lean to north from ground level.<br>▪ Tree to north-west of group has lower density canopy than others of group.<br>▪ Caravan owner stated trees crack paving and works to fix cracks will continue to potentially disturb roots. | ▪ Tree consultant to monitor group's physiological condition following ground works as component of subsequent cyclical inspections. | P = Deadwood to approximately 50mm diameter. T = Persons using garden area adjacent to caravan. | 3 | 4 | 2 | 25% | <1M | M |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G10 | 3no. Lawson Cypress 'Ellwood', 2no. Downy Birch, 1no. Norway Spruce, 1no. Alder | M | ≤ 19 | ≤ 560 | ≤ 11 | M | ▪ Loosely spaced linear group along road internal to caravan park.<br>▪ Birch second from north has a slightly thin canopy and slight reduction in vitality.<br>▪ Severely dense Ivy to one Birch stem and Alder.<br>▪ Alder stem obscured by dense bushes around base and dense Ivy.<br>▪ Norway Spruce has minor lean east. | ▪ Park staff to sever and remove Ivy from applicable trees from ground level to 2m height, and to prevent re-establishment through cyclical removal, to allow future detailed inspections (I). | P = Deadwood to approximately 30mm.<br>T = Persons using garden areas adjacent to caravans. | 3 | 4 | 2 | 25% | <1M | L |
| G11 | Scots Pine, Alder, Downy Birch, Ash | M | ≤ 21 | ≤ 720 | ≤ 14 | M-G | ▪ Loosely to closely spaced group either side of Laurel Drive and east of Ivy Drive.<br>▪ Dense basal growth to some Alders, and moderate Ivy to some other stem bases thereby partially restricting detailed inspection.<br>▪ Inspection of several trees partially obscured by shrubs and garden items stacked around stem bases.<br>▪ Deadwood in Scots Pine to approximately 100mm diameter overhanging gardens and road.<br>▪ Several Birch and Alder have moderate stem leans from ground level. | ▪ Park staff to clear basal growth and Ivy from applicable stems prior to next cyclical inspection (I).<br>▪ Park staff to review Pines within group following inclement weather events due to propensity for branch loss during such events.<br>▪ Tree consultant to review Ash within group during summer 2026 to appraise canopy for ADD. | P = Branches of Pine trees up to 150mm diameter.<br>T = Caravans and occupants below. | 2 | P | 5 | N/A | 1M | L |
| G12 | 2no. Scots Pine | - | - | - | - | - | ▪ Two Pine trees assessed as part of previous survey BTC2431 in February 2022.<br>▪ Removed following previous survey recommendations. | ▪ N/A | - | - | - | - | - | - | - |
| G13 | 8no. Downy Birch | M | ≤ 16 | ≤ 390 | ≤ 13 | M | ▪ Two linear groups located to north of caravans 68 and 69.<br>▪ Stem of tree to centre of group bifurcates at a height of approximately 2m.<br>▪ Recent landscaping in rooting area and new caravans to south.<br>▪ Slight to moderate reductions in canopy vitality evident with evidence of partially occluded damage to bases. | ▪ Tree consultant to monitor group's physiological condition following ground works as component of subsequent cyclical inspections. | P = Deadwood to approximately 50mm diameter.<br>T = Person using internal road. | 2 | 4 | 3 | 25% | <1M | L |

| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G14 | 5no. Downy Birch | M | 18 | 490 | 10 | M-G | ▪ Group located around caravan 136.<br>▪ Southern tree twin stemmed from ground level with tight included bark union.<br>▪ Historic cavity of approximately 200mm diameter at 2.5m height on east side with moderate hollowing but largely non progressive.<br>▪ One tree approximately 1m east of caravan has multiple historic partially occluded decay cavities from 700mm to 1m height which are evidently long standing and non-progressive.<br>▪ Stem bifurcates at approximately 1.5m height and highly attenuated over caravan.<br>▪ Tree located to north-east of group has moderately dense Ivy to base. | ▪ Park staff to sever and remove Ivy from applicable trees ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I). | P = Stem of 150mm diameter of tree adjacent to caravan at 1.5m height.<br>T = Caravan and occupants. | 3 | P | 5 | N/A | <1M | L |
| G15 | approx. 1no. Sycamore, 3no. Ash plus Lawson Cypress, Hawthorn, Yew, Privet | SM-EM | ≤ 16 | ≤ 460 | ≤ 14 | M-G | ▪ Closely spaced linear group along stone wall forming a former field boundary.<br>▪ Sycamore to centre of group has multiple stems arising at a height of approximately 300mm.<br>▪ Ash to west of group have minor/moderate twig dieback in upper canopy associated with effects of ADD, with remaining canopy falling into Classes 1-2.<br>▪ Minor deadwood in group up to 40mm diameter. | ▪ Park staff to monitor unions for incipient signs of failure when carrying out routine tasks around site and following extreme weather events.<br>▪ Tree consultant to monitor tight unions on Sycamore to centre of group for incipient signs of failure, as a component of subsequent programme of inspections. | P = Main stem of Sycamore of approximately 300mm diameter at main bifurcation point.<br>T = Persons using internal road and garden areas. | 2 | 2 | 5 | N/A | 1M | L |
| G16 | 4no. Common Yew, 2no. Irish Yew, 1no. Downy Birch | EM | ≤ 12 | ≤ 430 | ≤ 10 | M/P | ▪ Heavy past pruning of lower branches of Yews leaving pruning wounds and stubs to 100mm diameter and canopies of poor form.<br>▪ Several canopies of Yews to south-east of group are thin and showing significant reductions in vitality.<br>▪ Limited potential for future growth. | ▪ N/A | P = Deadwood to approximately 25mm diameter.<br>T = Residents using gardens adjacent to caravans. | 3 | 4 | 5 | N/A | <1M | N/A |

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| **Client:** | Shireburne Park Ltd |
| **Brief:** | Carry out an individual tree survey within area specified by client, report on projected risk posed to persons and property, and make management recommendations where appropriate |

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| **Surveyor:** | Noah Singleton BSc(Hons) |
| **Survey Dates:** | 14 & 20 October 2025 |
| **Viewing Conditions:** | Overcast with heavy rain showers and moderate winds |
| **Job Reference:** | BTC3337 |



| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G17 | Downy Birch | M | ≤ 16 | ≤ 350 | ≤ 14 | M | ▪ Closely to moderately spaced linear group.<br>▪ Majority of trees have multiple primary branches arising at a height of approximately 2.5m.<br>▪ One tree of group has lost secondary stem at approximately 3.5m height with extent of decay from loss unclear due to location out of view from ground. | ▪ Client to arrange for climbing arboriculturist (i.e. tree contractor) to undertake aerial inspection of wound (see comments) when next on site and report findings to tree consultant. | P = Deadwood to approximately 25mm diameter.<br>T = Persons using internal road to caravan park. | 3 | 4 | 3 | 25% | <1M | L |
| G18 | 2no. Downy Birch | M | ≤ 16 | ≤ 500 | ≤ 12 | M | ▪ Moderately spaced pair.<br>▪ Stem of tree to east trifurcates at approximately 2m height.<br>▪ Stem of tree to west bifurcates at approximately 2m height, with 200mm diameter decay pocket in union from previously removed branch.<br>▪ Localised decay when sounded with nylon mallet, but evidently long standing and no signs of significant recent progression of decay.<br>▪ West of stem has 100mm partially occluded decay cavity joining with branch stub opening.<br>▪ New caravan installed to west with likely resultant disturbance of rooting area.<br>▪ No significant changes since previous survey. | ▪ Tree consultant to monitor decay pocket around previously removed limb and tight union on tree to centre of group for further decay encroachment, and to monitor canopy for signs of physiological condition, as a component of subsequent programme of inspections. | P = Stem of approximately 400mm diameter of tree west at 2m height.<br>T = Parked vehicle(s) in driveway below canopy. | 3 | P | 4 | N/A | 300 K | L |
| G19 | approx. 5no. Downy Birch, 2no. Goat Willow, 2no. Alder | M | ≤ 18 | ≤ 460 | ≤ 10 | M | ▪ Closely to moderately spaced linear group on bank sloping steeply to south.<br>▪ Areas of retaining wooden and earth wall below.<br>▪ Hedge and fencing part restricted access to group. | ▪ Tree consultant to monitor physiological condition as component of subsequent cyclical inspections. | P = Deadwood to approximately 75mm diameter.<br>T = Persons occupying caravan below canopy. | 1 | 4 | 3 | 25% | 200 K | L |
| G20 | 3no. Downy Birch, 1no. Alder, 1no Ash, 1no. Sycamore | M | ≤ 20 | ≤ 580 | ≤ 14 | M | ▪ Closely spaced group atop bank which slopes steeply to south.<br>▪ Ash has slight stem lean to north-west from ground level over caravan and slightly biased canopy to north-west.<br>▪ Alder has slight stem lean to north-east from ground level and stem failure of approximately 120mm at 8m height.<br>▪ Significant Ivy and understorey, which partially impeded inspection. | ▪ Park maintenance staff to sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I). | P = Deadwood in Ash to approximately 50mm diameter.<br>T = Persons using garden adjacent to caravan. | 3 | 4 | 2 | 50% | 1M | L |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G21 | approx. 15no. Birch, 6no. Alder, 3no. Scots Pine, 1no. Beech, 1no. Lawson Cypress, 1no. Norway Maple, 1no. Sycamore. | EM-M | ≤ 21 | ≤ 680 | ≤ 16 | M-G | ▪ *Previously recorded as group G24 in 2019 survey.*<br>▪ Closely to moderately spaced group.<br>▪ Construction of parking area to centre of group has led to frequent mechanical damage to many stems of adjacent Birch and Alder.<br>▪ Lawson Cypress to north-west has five stems arising from ground level which have been topped at a height of approximately 9m with regrowth to approximately 3m.<br>▪ Sycamore to east has multiple stems arising at ground level with tight unions and included bark.<br>▪ Beech to east has multiple primary branches arising at a height of approximately 2.5m.<br>▪ Trees have deadwood up to 40mm diameter over parking areas. | ▪ Park staff to monitor condition of group's canopies and report any reduction in vitality when next in full leaf to tree consultant. | P = 300mm diameter Sycamore stem at base.<br>T = Persons occupying neighbouring caravan. | 1 | 2 | 5 | N/A | 100 K | L |
| G22 | 2no. Yew, 1no. Irish Yew, 1no. Goat Willow, 1no. Cypress | M | ≤ 12 | ≤ 620 | ≤ 8 | M | ▪ Common Yews to east of group have had canopies raised to approximately 5m.<br>▪ Stem of Goat Willow to centre of group bifurcates just above ground level with branch arising to north-west of approximately 250mm diameter with a tight included bark union.<br>▪ Goat Willow divides again at 1.5m with canopy moderately biased to south over single-storey building, with limited potential for future growth.<br>▪ Western Yew has deadwood up to 20mm diameter above paving slabs from two attenuated branches with significant leans west.<br>▪ Exposure of central stems of western Yew suggests part failure of these attenuated branches however there are no visible cracks. | ▪ Client to consider removal of Goat Willow due to increased risk of stem failure and limited potential for future growth (M).<br>▪ Client to consider removal of two attenuated branches on Yew due to increased risk of failure. | P = Main 250mm diameter stem at bifurcation point.<br>T = Pedestrians using footpath to west. | 3 | 3 | 3 | N/A | 500 K | L |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G23 | 1no. Goat Willow, 1no. Holly, 1no. Wild Cherry | EM | ≤ 11 | ≤ 1x500 1x450 (ts) | ≤ 11 | P-G | ▪ Goat Willow has two stems arising at ground level with a tight included bark union.<br>▪ Canopy previously reduced all round, in particular away from building to east, resulting in moderate bias to west.<br>▪ Regrowth from pruning cuts of approximately 3.5m length and beginning to reach building again.<br>▪ Canopy of Wild Cherry highly biased to north-west due to suppression by neighbouring tree, and in close proximity to adjacent caravan.<br>▪ Holly is twin-stemmed from ground level and has a thin canopy with a minor reduction in vitality.<br>▪ Some Ivy beginning to establish at stem bases, with Willow having moderate density of Ivy cover. | ▪ Park staff to sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections.<br>▪ Client to consider removal of Wild Cherry due to proximity to caravan and limited future potential due to suppression by adjacent Goat Willow.<br>▪ Tree contractor to reduce Goat Willow canopy to provide clearance from building (M). | P = Regrowth from pruning points of Goat Willow of approximately 75mm diameter. T = Persons using garden areas. | 3 | 4 | 5 | N/A | <1M | L |
| G24 | Apple, Laburnum, Lawson Cypress | SM | ≤ 7 | ≤ 200 | ≤ 5 | D-G | ▪ Very closely spaced group in dense Ivy and Beech hedge, not accessed to inspect in detail.<br>▪ One Laburnum of approximately 120mm diameter and 3m high has failed into long grass area.<br>▪ Apple in garden area mostly failed, however still bearing fruit.<br>▪ Additional unknown young tree dead and failed to south-east. | ▪ Park staff to remove fallen and failed trees within group (M). | P = Stems up to approximately 100mm diameter. T = Persons using garden areas. | 3 | 4 | 4 | N/A | <1M | L |
| G25 | 2no. Downy Birch | M | ≤ 10 | ≤ 270 | ≤ 8 | M | ▪ Stems growing through decking, thereby restricting basal inspection.<br>▪ Stem of tree to south bifurcates just above decking level with a tight union with stem touching the decking, however, neighbour stated the tree is scheduled to be removed. | ▪ N/A | P = Main stem of approximately 200mm diameter at bifurcation point. T = Caravan. | 2 | P | 6 | N/A | <1M | N/A |
| G26 | 1no. Alder, 1no. Pine | M | 19 | 580 | 12 | G | ▪ Alder to west trifurcates at approximately 3m height.<br>▪ Pine has slight stem lean to east from ground level.<br>▪ Top of canopy flattens at approximately height of 7.5m with canopy highly biased to east overhanging caravans.<br>▪ Deadwood to approximately 50mm diameter.<br>▪ Although canopy is highly biased tree is sheltered by woodland W3 to west. | ▪ N/A | P = Deadwood to approximately 50mm diameter. T = Persons using gardens adjacent to caravans. | 3 | 4 | 3 | 25% | <1M | N/A |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G27 | 2no. Common Holly, 1no. Hawthorn | PM | ≤ 8 | ≤ 280 | ≤ 5 | P-MD | ▪ Part of former hedgerow, which is now lapsed.<br>▪ Canopies of Hollies are very thin and showing a significant reduction in vitality.<br>▪ Hawthorn is moribund. | ▪ Tree contractor to coppice stems at ground level in order to encourage regeneration into hedgerow (M).<br>▪ Tree or Landscape contractor to infill hedgerow gaps created by the above with Hawthorn whips to reform hedgerow. | P = Dead stems to approximately 270mm diameter at 1m height.<br>T = Residents using gardens adjacent to caravans. | 3 | 2 | 3 | N/A | 100 K | M |
| G28 | 2no. Alder, 1no. Pear | EM | ≤ 9.5 | ≤ 380 | ≤ 9 | M-G | ▪ Loosely to closely spaced group.<br>▪ Pear and Alder to south are very closely spaced with Pear highly suppressed by Alder.<br>▪ Alder has initial lean east, corrected at 2m height.<br>▪ Pear has necrotic bark areas between ground level and 1.5m height and 1m long tear out wound to north of stem between 1.75-2.75m height.<br>▪ Alders evidently pruned at approximately 9m height. | ▪ N/A | P = Deadwood to approximately 25mm diameter.<br>T = Residents using garden adjacent to caravan. | 3 | 4 | 5 | 25% | <1M | N/A |
| G29 | Hawthorn, Hazel, Cypress, Willow, Birch, Cherry Laurel, Palm | M | ≤ 9 | ≤ 280 | ≤ 8 | M | ▪ Fragmented linear group of former field hedgerow.<br>▪ Now lapsed and unmanaged, and forming linear boundary between two areas of caravan park.<br>▪ Recent planting of smaller tree and shrub species adjacent to fragmented linear group. | ▪ Client to consider management of hedge through cutting, laying and infill planting with Hawthorn whips where appropriate, in order to return to managed hedgerow. | P = Dead stems to approximately 100mm diameter within hedgerow.<br>T = Residents using gardens adjacent to caravans. | 3 | 4 | 3 | N/A | <1M | L |
| G30 | Common Hawthorn | PM | ≤ 8 | ≤ 450 | ≤ 9 | P-MD | ▪ Very closely spaced linear group.<br>▪ Part of former but now lapsed hedgerow.<br>▪ Moribund canopies in very poor condition. | ▪ Tree contractor to coppice stems at ground level in order to encourage regeneration into hedgerow (M).<br>▪ Tree or Landscape contractor to infill hedgerow gaps created by the above with Hawthorn whips to reform hedgerow. | P = Dead stems to approximately 150mm diameter from a height of approximately 1m.<br>T = Pedestrians and grounds staff passing. | 4 | 3 | 4 | N/A | <1M | L |

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| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G31 | Alder, Ash, Goat Willow, Hawthorn, Larch, Oak, Sycamore, Wych Elm | Y-M | ≤ 18 | ≤ 650 | ≤ 15 | M-G | ▪ Construction of Willow Close to north of group and associated retaining wall has evidently led to raised soil levels within group.<br>▪ Two Goat Willow located to west of group have previously had limbs of approximately 200mm diameter removed at a height of approximately 300mm with subsequent decay of stubs.<br>▪ Significantly dense Ivy to several stems, including mature Oak to centre.<br>▪ Dead Cherry to centre-north of group adjacent to road.<br>▪ Larch south of property 17 is incorporating metal bracket into stem at approximately 2m height.<br>▪ Cypress to east of group is growing out of top of embankment to south of property 17 has significant canopy bias south relative to ground level in embankment.<br>▪ Group largely viewed from adjacent roads due to steep banking within group. | ▪ Park staff to sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I).<br>▪ Park staff to monitor condition of tree canopies and report any reduction in vitality to tree consultant.<br>▪ Tree contractor to remove dead Cherry due to identified increased risk of failure.<br>▪ Client to consider removal of Cypress south of property 17 due to limited potential for future growth. | P = Dead Cherry stem to 150mm diameter.<br>T = Persons using adjacent road internal to caravan park. | 3 | 3 | 2 | N/A | 50K | M |
| G32 | 2no. Wych Elm, 1no. Japanese Larch | EM | 20 | 490 | 15 | D-M | ▪ Larch showing a moderate reduction in vitality with moderate amount of deadwood up to approximately 100mm diameter and top 3m of canopy has significant lean north-east.<br>▪ Two Elm on river bank are dead but still standing. | ▪ Tree contractor to prune to remove deadwood >50mm diameter in Larch (M).<br>▪ Tree contractor to remove dead Elm trees due to increased likelihood of subsequent failure. | P = Deadwood up to 100mm diameter.<br>T = Persons using garden area adjacent to caravan. | 3 | 4 | 2 | N/A | 500 K | L |
| G33 | 1no. Ash | M | ≤ 5 | ≤ 730 | ≤ 3 | P | ▪ All but one tree of previously surveyed group in 2022 removed.<br>▪ Ash bifurcates at a height of approximately 2m with slightly tight union with approximately 400mm diameter wound from branch removal.<br>▪ 2m long regrowth from previous pruning wound provides only foliage associated with tree.<br>▪ Tree out of leaf at time of survey, however evidently displaying minor/moderate signs of colonisation by ADD. | ▪ Tree contractor to remove remaining tree of group due to projected increase in failure risk on further decline. | P = Branches up to approximately 100mm diameter.<br>T = Residents using patio and decking areas of gardens adjacent to caravans. | 2 | 4 | 2 | N/A | 50K | M |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G34 | 5no. Alder 1no. Crab Apple, 1no. Purple Plum, 1no. Goat Willow, 1no. Lawson Cypress, 1no. Cedar, 1no. Fir | EM | ≤ 16 | ≤ 1x350 1x330 1x300 (ms) | ≤ 16 | G | ▪ Closely spaced to loosely spaced group.<br>▪ Dense Ivy on several stems located on river bank restricting detailed inspection.<br>▪ Alder to north-east of group, three stems arise from ground level and canopy in close proximity to caravan.<br>▪ Lower canopy in contact with adjacent caravan to north-west. | ▪ Park staff to sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections (I).<br>▪ Tree contractor to prune trees' canopies to obtain a 1m clearance from caravan roof (M).<br>▪ Tree contractor to remove Purple Plum due to projected increase in failure risk on continued decline. | P = Deadwood to approximately 25mm diameter. T = Residents using garden adjacent to caravan. | 3 | 4 | 3 | 50% | <1M | M |
| G35 | approx. 6no. Wych Elm, 5no. Sycamore, 2no. Norway Spruce, 1no. Ash, 1no. Goat Willow | M | ≤ 16 | ≤ 550 | ≤ 14 | M-G | ▪ Closely to loosely spaced group located adjacent to river bank.<br>▪ Location on steep river bank restricted detailed inspect of some trees.<br>▪ Dense Ivy to several stems impeded inspection.<br>▪ Lower canopy edge of one Norway Spruce close to contacting caravan roof.<br>▪ Goat Willow to south-east has had stem arising to north-west pollarded at approximately 3m height. | ▪ Tree contractor to prune Norway Spruce to attain approximately 0.5m clearance to adjacent caravan roof (M). | P = Deadwood up to approximately 75mm diameter. T = Residents using gardens adjacent to caravans. | 3 | 4 | 2 | 25% | <1M | L |
| G36 | approx. 6no. Leyland Cypress, 1no. Lawsons Cypress | M | ≤ 23 | ≤ 440 | ≤ 9 | G | ▪ Linear group to woodland edge in steeply sloping bank.<br>▪ Largest Leyland Cypress within group have significant bark inclusions at approximately 4m and 7m heights the largest of which is approximately 3m long with little adaptive taper below.<br>▪ Canopies highly biased to south-west over caravans.<br>▪ Species prone to windthrow, included bark union failures and failure from snow accumulations during winter months. | ▪ Tree contractor to remove group due to identified increased risk of failure and subsequent unacceptable risk of harm to persons. | P = Stems at 4-7m height of approximately 280mm diameter. T = Persons occupying caravans. | 1 | 2 | 3 | N/A | 4K | H |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W1 | Ash, Elm, Grey Poplar, Sycamore, Hazel, Rowan, Hawthorn | Y-M | ≤ 17 | ≤ 700 | ≤ 14 | M-P | ▪ Woodland on bank sloping steeply to east and south-east bordering road.<br>▪ Young to semi-mature Ash within woodland showing significant colonisation by ADD with remaining canopies between Classes 1-3.<br>▪ Wych Elm to east of woodland and forming part of occasionally managed boundary feature overhanging public road. | ▪ Client to consider management of hedge through cutting, laying and infill planting with Hawthorn whips where appropriate, in order to return to managed hedgerow.<br>▪ Tree contractor to identify and remove Ash that are succumbing to ADD and Elm succumbing to DED, due to projected increase in failure risk on further decline (M). | P = Main stems of Wych Elm to approximately 200mm diameter.<br>T = Vehicles and occupants using adjacent to Edisford Road. | 2 | 3 | 3 | N/A | 50K | M |
| W2 | Mixed woodland incl. Alder, Ash, Birch, Goat Willow, Hawthorn, Scots Pine, Sycamore, Wych Elm | Y-M | ≤ 20 | ≤ 650 | ≤ 12 | G-P | ▪ Woodland located on bank sloping very steeply to south down to river edge.<br>▪ Several new caravan plots in close proximity to woodland particularly to Birch and Goat Willow stems with evidence of soil raising and mechanical damage.<br>▪ Several Ash colonised by ADD with remaining canopy falling into Class 3, but located further down bank and not within striking distance of caravans.<br>▪ Ivy to several stems, which subsequently impeded inspection. | ▪ Park staff to sever and remove Ivy from ground level to 2m height and prevent re-establishment through cyclical removal to allow future detailed inspections. NB: Park staff to subsequently report any structural defects found during these works to tree consultant (I).<br>▪ Tree contractor to identify and remove Ash that are succumbing to ADD, in accordance with good management practice, due to their projected continued decline (M).<br>▪ Park staff to monitor condition of tree canopies and report any reduction in vitality observed when next in leaf to tree consultant. | P = Deadwood to approximately 100mm diameter.<br>T = Persons using areas of garden adjacent to caravans. | 3 | 4 | 2 | 50% | 1M | M |

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| **Surveyor:** | Noah Singleton BSc(Hons) |
| **Survey Dates:** | 14 & 20 October 2025 |
| **Viewing Conditions:** | Overcast with heavy rain showers and moderate winds |
| **Job Reference:** | BTC3337 |



| No. | Species | Age | Height (m) | Stem Diam. (mm) | Crown Spread (m) | Vitality | Comments | Management Recommendations | Risk Assessment Description (Part/Target) | Target | Size | P.O.F | Reduced Mass % | Risk Index | Work Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W3 | Mixed woodland including: Alder, Ash, Birch, Goat Willow, Hawthorn, Lime, Norway Spruce, Scots Pine, Sycamore, Wych Elm | Y-M | ≤ 22 | ≤ 750 | ≤ 16 | M-G | ▪ Located along bank sloping steeply to west and south, with caravans above and below.<br>▪ Topography and undergrowth impeded inspection in parts.<br>▪ Number of young Ash within woodland colonised by ADD with remaining canopies falling into Classes 2-3.<br>▪ Ivy on some stems to east of woodland, thereby partially restricting detailed inspections. | ▪ Park staff to sever Ivy around stem circumferences at ground level and remove to a height of 1.5m. NB: Park staff to subsequently report any structural defects found during these works to tree consultant (I).<br>▪ Tree contractor to identify and remove Ash succumbing to ADD due to projected increase in failure risk on further decline (M). | P = Deadwood to approximately 100mm diameter.<br>T = Persons using areas of garden adjacent to caravans. | 3 | 4 | 3 | 50% | <1M | M |
| W4 | Mixed broadleaf incl. Alder, Sycamore, Wild Cherry | Y-M | ≤ 18 | ≤ 750 | ≤ 14 | M | ▪ Not accessed to inspect in detail.<br>▪ Loosely spaced trees forming open area of woodland.<br>▪ Mature Sycamore at river edge to west with dense Ivy.<br>▪ Early mature Alder and Cherry to east of woodland on ground sloping steeply to west.<br>▪ Soil deposited in piles within root areas of Alder and Cherry, and other significant earth moving works occurred to north of group.<br>▪ Cherry to east of group is dead.<br>▪ Alders to north of group have recent mechanical damage to stems.<br>▪ A Cherry to centre of group has reduced canopy vitality and 0.5m tall, 200mm wide hollow to south of stem when sounded with nylon mallet. | ▪ Tree contractor to remove dead Cherry to centre of group due to increased likelihood of failure.<br>▪ Tree consultant to monitor physiological condition of remaining Alders and Cherries to north of group as part future cyclical inspections. | P = Whole stem failure of Cherry.<br>T = Pedestrians and grounds staff passing. | 5 | 2 | 3 | N/A | <1M | L |


**T = Individual Tree G = Group of Trees W = Woodland**

- (Red) = Tree/Group/Woodland with Risk of Harm of 1/1,000 or greater
- (Orange) = Tree/Group/Woodland with Risk of Harm between 1/1,000 and 1/10,000
- (Yellow) = Tree/Group/Woodland with Risk of Harm between 1/10,000 and 1/1,000,000
- (Green) = Tree/Group/Woodland with Risk of Harm less than 1/1,000,000

* See QTRA Methodology Overview and Application in Management Decisions Section of Report for details regarding Risk of Harm

**Site: Shireburne Park, Edisford Road, Waddington, BB7 3LB**

**Job No. BTC3337**

**Scale: Not to Scale**

**Paper Size (for printing): A4**

**Date: November 2025**

# TREE SURVEY PLAN

**(Plan 1 of 2)**

Bowland Tree Consultancy Ltd

e: info@bowlandtreeconsultancy.co.uk
t: 01772 437150


**T = Individual Tree G = Group of Trees W = Woodland**

- (Red) = Tree/Group/Woodland with Risk of Harm of 1/1,000 or greater
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# TREE SURVEY PLAN

**(overview)**

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**Site: Shireburne Park, Edisford Road, Waddington, BB7 3LB**

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# TREE SURVEY PLAN

**(Plan 2 of 2)**

Bowland Tree Consultancy Ltd

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Quantified Tree Risk Assessment

*Simply Balancing Risks With Benefits*

# Quantified Tree Risk Assessment

# PRACTICE NOTE

VERSION 5

# Quantified Tree Risk Assessment Practice Note

*"When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind"*

William Thomson, Lord Kelvin, Popular Lectures and Addresses [1891-1894]

## 1. INTRODUCTION

Every day we encounter risks in all of our activities, and the way we manage those risks is to make choices. We weigh up the costs and benefits of the risk to determine whether it is acceptable, unacceptable, or tolerable. For example, if you want to travel by car you must accept that even with all the extensive risk control measures, such as seat-belts, speed limits, airbags, and crash barriers, there is still a significant risk of death. This is an everyday risk that is taken for granted and tolerated by millions of people in return for the benefits of convenient travel. Managing trees should take a similarly balanced approach.

A risk from falling trees exists only if there is both potential for tree failure and potential for harm to result. The job of the risk assessor is to consider the likelihood and consequences of tree failure. The outcome of this assessment can then inform consideration of the risk by the tree manager, who may also be the owner.

Using a comprehensive range of values[1], Quantified Tree Risk Assessment (QTRA) enables the tree assessor to identify and analyse the risk from tree failure in three key stages. 1) to consider land-use in terms of vulnerability to impact and likelihood of occupation, 2) to consider the consequences of an impact, taking account of the size of the tree or branch concerned, and 3) to estimate the probability that the tree or branch will fail onto the land-use in question. Estimating the values of these components, the assessor can use the QTRA manual calculator or software application to calculate an annual Risk of Harm from a particular tree. To inform management decisions, the risks from different hazards can then be both ranked and compared, and considered against broadly acceptable and tolerable levels of risk.

**A Proportionate Approach to Risks from Trees**

The risks from falling trees are usually very low and high risks will usually be encountered only in areas with either high levels of human occupation or with valuable property. Where levels of human occupation and value of property are sufficiently low, the assessment of trees for structural weakness will not usually be necessary. Even when land-use indicates that the assessment of trees is appropriate, it is seldom proportionate to assess and evaluate the risk for each individual tree in a population. Often, all that is required is a brief consideration of the trees to identify gross signs of structural weakness or declining health. Doing all that is reasonably practicable does not mean that all trees have to be individually examined on a regular basis (HSE 2013).

The QTRA method enables a range of approaches from the broad assessment of large collections of trees to, where necessary, the detailed assessment of an individual tree.

**Risk of Harm**

The QTRA output is termed the Risk of Harm and is a combined measure of the likelihood and consequences of tree failure, considered against the baseline of a lost human life within the coming year.

**ALARP (As Low As Reasonably Practicable)**

Determining that risks have been reduced to As Low As Reasonably Practicable (HSE 2001) involves an evaluation of both the risk and the sacrifice or cost involved in reducing that risk. If it can be demonstrated that there is gross disproportion between them, the risk being insignificant in relation to the sacrifice or cost, then to reduce the risk further is not 'reasonably practicable'.

**Costs and Benefits of Risk Control**

Trees confer many benefits to people and the wider environment. When managing any risk, it is essential to maintain a balance between the costs and benefits of risk reduction, which should be considered in the determination of ALARP. It is not only the financial cost of controlling the risk that should be considered, but also the loss of tree-related benefits, and the risk to workers and the public from the risk control measure itself.

When considering risks from falling trees, the cost of risk control will usually be too high when it is clearly 'disproportionate' to the reduction in risk. In the

[1] See Tables 1, 2 & 3.

context of QTRA, the issue of 'gross disproportion'[2], where decisions are heavily biased in favour of safety, is only likely to be considered where there are risks of 1/10 000 or greater.

**Acceptable and Tolerable Risks**

The Tolerability of Risk framework (ToR) (HSE 2001) is a widely accepted approach to reaching decisions on whether risks are broadly acceptable, unacceptable, or tolerable. Graphically represented in Figure 1, ToR can be summarised as having a Broadly Acceptable Region where the upper limit is an annual risk of death 1/1 000 000, an Unacceptable Region for which the lower limit is 1/1 000, and between these a Tolerable Region within which the tolerability of a risk will be dependent upon the costs and benefits of risk reduction. In the Tolerable Region, we must ask whether the benefits of risk control are sufficient to justify their cost.

In respect of trees, some risks cross the Broadly Acceptable 1/1 000 000 boundary, but remain tolerable. This is because any further reduction would involve a disproportionate cost in terms of the lost environmental, visual, and other benefits, in addition to the financial cost of controlling the risk.

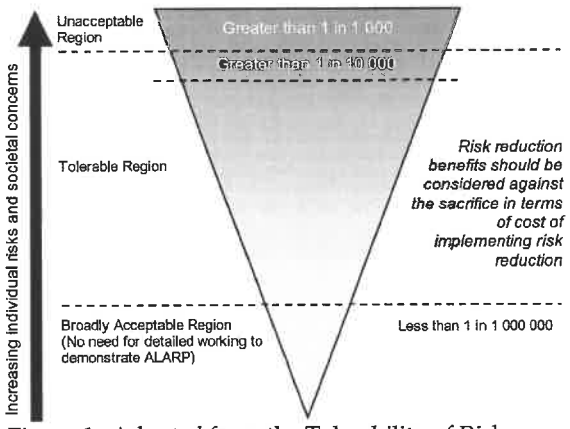


Figure 1. Adapted from the Tolerability of Risk framework (HSE 2001).

**Value of Statistical Life**

The Value of Statistical Life (VOSL), is a widely applied risk management device, which uses the value of a hypothetical life to guide the proportionate allocation of resources to risk reduction. In the UK, this value is currently in the region of £2 000 000, and this is the value adopted in the QTRA method.

In QTRA, placing a statistical value on a human life has two particular uses. Firstly, QTRA uses VOSL to enable damage to property to be compared with the loss of life, allowing the comparison of risks to people and property. Secondly, the proportionate allocation of financial resources to risk reduction can be informed by VOSL. ***"A value of statistical life of £1 000 000 is just another way of saying that a reduction in risk of death of 1/100 000 per year has a value of £10 per year"*** (HSE 1996).

Internationally, there is variation in VOSL, but to provide consistency in QTRA outputs, it is suggested that VOSL of £2 000 000 should be applied internationally. This is ultimately a decision for the tree manager.

## 2. OWNERSHIP OF RISK

Where many people are exposed to a risk, it is shared between them. Where only one person is exposed, that individual is the recipient of all of the risk and if they have control over it, they are also the owner of the risk. An individual may choose to accept or reject any particular risk to themselves, when that risk is under their control. When risks that are imposed upon others become elevated, societal concern will usually require risk controls, which ultimately are imposed by the courts or government regulators.

Although QTRA outputs might occasionally relate to an individual recipient, this is seldom the case. More often, calculation of the Risk of Harm is based on a cumulative occupation – i.e. the number of people per hour or vehicles per day, without attempting to identify the individuals who share the risk.

Where the risk of harm relates to a specific individual or a known group of people, the risk manager might consider the views of those who are exposed to the risk when making management decisions. Where a risk is imposed on the wider community, the principles set out in the ToR framework can be used as a reasonable approach to determine whether the risk is ALARP.

## 3. THE QTRA METHOD - VERSION 5

The input values for the three components of the QTRA calculation are set out in broad ranges[3] of Target, Size, and Probability of Failure. The assessor estimates values for these three components and inputs them on either the manual calculator or software application to calculate the Risk of Harm.

[2] Discussed further on page 5.

[3] See Tables 1, 2 & 3.

### Assessing Land-use (Targets)

The nature of the land-use beneath or adjacent to a tree will usually inform the level and extent of risk assessment to be carried out. In the assessment of Targets, six ranges of value are available. Table 2 sets out these ranges for vehicular frequency, human occupation and the monetary value of damage to property.

### Human Occupation

The probability of pedestrian occupation at a particular location is calculated on the basis that an average pedestrian will spend five seconds walking beneath an average tree. For example, an average occupation of ten pedestrians per day, each occupying the Target for five seconds is a daily occupation of fifty seconds, giving a likelihood of occupation 1/1,728. Where a longer occupation is likely, as with a habitable building, outdoor café, or park bench, the period of occupation can be measured, or estimated as a proportion of a given unit of time, e.g. six hours per day (1/4). The Target is recorded as a range (Table 2).

### Weather Affected Targets

Often the nature of a structural weakness in a tree is such that the probability of failure is greatest during windy weather, while the probability of the site being occupied by people during such weather is often low. This applies particularly to outdoor recreational areas. When estimating human Targets, the risk assessor must answer the question 'in the weather conditions that I expect the likelihood of failure of the tree to be initiated, what is my estimate of human occupation?' Taking this approach, rather than using the average occupation, ensures that the assessor considers the relationship between weather, people, and trees, along with the nature of the average person with their ability to recognise and avoid unnecessary risks.

### Vehicles on the Highway

In the case of vehicles, likelihood of occupation may relate to either the falling tree or branch striking the vehicle or the vehicle striking the fallen tree. Both types of impact are influenced by vehicle speed; the faster the vehicle travels the less likely it is to be struck by the falling tree, but the more likely it is to strike a fallen tree. The probability of a vehicle occupying any particular point in the road is the ratio of the time it is occupied - including a safe stopping distance - to the total time. The average vehicle on a UK road is occupied by 1.6 people (DfT 2010). To account for the substantial protection that the average vehicle provides against most tree impacts and in particular, frontal collisions, QTRA values the substantially protected 1.6 occupants in addition to the value of the vehicle as equivalent to one exposed human life.

### Property

**Table 1. Size**

| Size Range | Size of tree or branch | Range of Probability |
|---|---|---|
| 1 | > 450mm (>18") dia. | 1/1 - >1/2 |
| 2 | 260mm (10½") dia. - 450mm (18") dia. | 1/2 - >1/8.6 |
| 3 | 110mm (4½") dia. - 250mm (10") dia. | 1/8.6 - >1/82 |
| 4 | 25mm (1") dia. - 100mm (4") dia. | 1/82 - 1/2 500 |

* Range 1 is based on a diameter of 600mm.

Property can be anything that could be damaged by a falling tree, from a dwelling, to livestock, parked car, or fence. When evaluating the exposure of property to tree failure, the QTRA assessment considers the cost of repair or replacement that might result from failure of the tree. Ranges of value are presented in Table 2 and the assessor's estimate need only be sufficient to determine which of the six ranges the cost to select.

In Table 2, the ranges of property value are based on a VOSL of £2 000 000, e.g. where a building with a replacement cost of £20 000 would be valued at 0.01 (1/100) of a life (Target Range 2).

When assessing risks in relation to buildings, the Target to be considered might be the building, the occupants, or both. Occupants of a building could be protected from harm by the structure or substantially exposed to the impact from a falling tree if the structure is not sufficiently robust, and this will determine how the assessor categorises the Target.

### Multiple Targets

A Target might be constantly occupied by more than one person and QTRA can account for this. For example, if it is projected that the average occupation will be constant by 10 people, the Risk of Harm is calculated in relation to one person constantly occupying the Target before going on to identify that the average occupation is 10 people. This is expressed as Target 1(10T)/1, where 10T represents the Multiple Targets. In respect of property, a Risk of Harm 1(10T)/1 would be equivalent to a risk of losing £20 000 000 as opposed to £2 000 000.

### Tree or Branch Size

A small dead branch of less than 25mm diameter is not likely to cause significant harm even in the case of direct contact with a Target, while a falling branch with a diameter greater than 450mm is likely to cause some harm in the event of contact with all but the most robust Target. The QTRA method categorises

Size by the diameter of tree stems and branches (measured beyond any basal taper). An equation derived from weight measurements of trees of different stem diameters is used to produce a data set of comparative weights of trees and branches ranging from 25mm to 600mm diameter, from which Table 1 is compiled. The size of dead branches might be discounted where they have undergone a significant reduction in weight because of degradation and shedding of subordinate branches. This discounting, referred to as 'Reduced Mass', reflects an estimated reduction in the mass of a dead branch.

**Table 2. Targets**

| Target Range | Property (repair or replacement cost) | Human (not in vehicles) | Vehicle Traffic (number per day) | Ranges of Value (probability of occupation or fraction of £2 000 000) |
|---|---|---|---|---|
| 1 | £2 000 000 – >£200 000 | **Occupation:** Constant – 2.5 hours/day<br>**Pedestrians & cyclists:** 720/hour – 73/hour | 26 000 – 2 700 @ 110kph (68mph)<br>32 000 – 3 300 @ 80kph (50mph)<br>47 000 – 4 800 @ 50kph (32mph) | 1/1 – >1/10 |
| 2 | £200 000 – >£20 000 | **Occupation:** 2.4 hours/day – 15 min/day<br>**Pedestrians & cyclists:** 72/hour – 8/hour | 2 600 – 270 @ 110kph (68mph)<br>3 200 – 330 @ 80kph (50mph)<br>4 700 – 480 @ 50kph (32mph) | 1/10 – >1/100 |
| 3 | £20 000 – >£2 000 | **Occupation:** 14 min/day – 2 min/day<br>**Pedestrians & cyclists:** 7/hour – 2/hour | 260 – 27 @ 110kph (68mph)<br>320 – 33 @ 80kph (50mph)<br>470 – 48 @ 50kph (32mph) | 1/100 – >1/1 000 |
| 4 | £2 000 – >£200 | **Occupation:** 1 min/day – 2 min/week<br>**Pedestrians & cyclists:** 1/hour – 3/day | 26 – 4 @ 110kph (68mph)<br>32 – 4 @ 80kph (50mph)<br>47 – 6 @ 50kph (32mph) | 1/1 000 – >1/10 000 |
| 5 | £200 – >£20 | **Occupation:** 1 min/week – 1 min/month<br>**Pedestrians & cyclists:** 2/day – 2/week | 3 – 1 @ 110kph (68mph)<br>3 – 1 @ 80kph (50mph)<br>5 – 1 @ 50kph (32mph) | 1/10 000 – >1/100 000 |
| 6 | £20 – £2 | **Occupation:** <1 min/month – 0.5 min/year<br>**Pedestrians & cyclists:** 1/week – 6/year | None | 1/100 000 – 1/1 000 000 |

Vehicle, pedestrian and property Targets are categorised by their frequency of use or their monetary value. The probability of a vehicle or pedestrian occupying a Target area in Target Range 4 is between the upper and lower limits of 1/1 000 and >1/10 000 (column 5). Using the VOSL £2 000 000, the property repair or replacement value for Target Range 4 is £2 000 - >200.

### Probability of Failure

In the QTRA assessment, the probability of tree or branch failure within the coming year is estimated and recorded as a range of value (Ranges 1 – 7, Table 3).

Selecting a Probability of Failure (PoF) Range requires the assessor to compare their assessment of the tree or branch against a benchmark of either a non-compromised tree at Probability of Failure Range 7, or a tree or branch that we expect to fail within the year, which can be described as having a 1/1 probability of failure.

During QTRA training, Registered Users go through a number of field exercises in order to calibrate their estimates of Probability of Failure.

**Table 3. Probability of Failure**

| Probability of Failure Range | Probability |
|---|---|
| 1 | 1/1 - >1/10 |
| 2 | 1/10 - >1/100 |
| 3 | 1/100 - >1/1 000 |
| 4 | 1/1 000 - >1/10 000 |
| 5 | 1/10 000 – >1/100 000 |
| 6 | 1/100 000 – >1/1 000 000 |
| 7 | 1/1 000 000 – 1/10 000 000 |

The probability that the tree or branch will fail within the coming year.

### The QTRA Calculation

The assessor selects a Range of values for each of the three input components of Target, Size and Probability of Failure. The Ranges are entered on either the manual calculator or software application to calculate a Risk of Harm.

The Risk of Harm is expressed as a probability and is rounded, to one significant figure. Any Risk of Harm

that is lower than 1/1 000 000 is represented as <1/1 000 000. As a visual aid, the Risk of Harm is colour coded using the traffic light system illustrated in Table 4 (page 7).

**Risk of Harm - Monte Carlo Simulations**

The Risk of Harm for all combinations of Target, Size and Probability of Failure Ranges has been calculated using Monte Carlo simulations[4]. The QTRA Risk of Harm is the mean value from each set of Monte Carlo results.

In QTRA Version 5, the Risk of Harm should not be calculated without the manual calculator or software application.

**Assessing Groups and Populations of Trees**

When assessing populations or groups of trees, the highest risk in the group is quantified and if that risk is tolerable, it follows that risks from the remaining trees will also be tolerable, and further calculations are unnecessary. Where the risk is intolerable, the next highest risk will be quantified, and so on until a tolerable risk is established. This process requires prior knowledge of the tree manager's risk tolerance.

**Accuracy of Outputs**

The purpose of QTRA is not necessarily to provide high degrees of accuracy, but to provide for the quantification of risks from falling trees in a way that risks are categorised within broad ranges (Table 4).

## 4. INFORMING MANAGEMENT DECISIONS

**Balancing Costs and Benefits of Risk Control**

When controlling risks from falling trees, the benefit of reduced risk is obvious, but the costs of risk control are all too often neglected. For every risk reduced there will be costs, and the most obvious of these is the financial cost of implementing the control measure. Frequently overlooked is the transfer of risks to workers and the public who might be directly affected by the removal or pruning of trees. Perhaps more importantly, most trees confer benefits, the loss of which should be considered as a cost when balancing the costs and benefits of risk control.

When balancing risk management decisions using QTRA, consideration of the benefits from trees will usually be of a very general nature and not require detailed consideration. The tree manager can consider, in simple terms, whether the overall cost of risk control is a proportionate one. Where risks are approaching 1/10 000, this may be a straightforward balancing of cost and benefits. Where risks are 1/10 000 or greater, it will usually be appropriate to implement risk controls unless the costs are grossly disproportionate to the benefits rather than simply disproportionate. In other words, the balance being weighted more on the side of risk control with higher associated costs.

**Considering the Value of Trees**

It is necessary to consider the benefits provided by trees, but they cannot easily be monetised and it is often difficult to place a value on those attributes such as habitat, shading and visual amenity that might be lost to risk control.

A simple approach to considering the value of a tree asset is suggested here, using the concept of 'average benefits'. When considered against other similar trees, a tree providing 'average benefits' will usually present a range of benefits that are typical for the species, age and situation. Viewed in this way, a tree providing 'average benefits' might appear to be low when compared with particularly important trees – such as in Figure 2, but should nonetheless be sufficient to offset a Risk of Harm of less than 1/10 000. Without having to consider the benefits of risk controls, we might reasonably assume that below 1/10 000, the risk from a tree that provides 'average benefits' is ALARP.

In contrast, if it can be said that the tree provides lower than average benefits because, for example, it is declining and in poor physiological condition, it may be necessary to consider two further elements. Firstly, is the Risk of Harm in the upper part of the Tolerable Region, and secondly, is the Risk of Harm likely to increase before the next review because of an increased Probability of Failure. If both these conditions apply then it might be appropriate to consider the balance of costs and benefits of risk reduction in order to determine whether the risk is ALARP. This balance requires the tree manager to take a view of both the reduction in risk and the costs of that reduction.

[4] For further information on the Monte Carlo simulation method, refer to http://en.wikipedia.org/wiki/Monte_Carlo_method

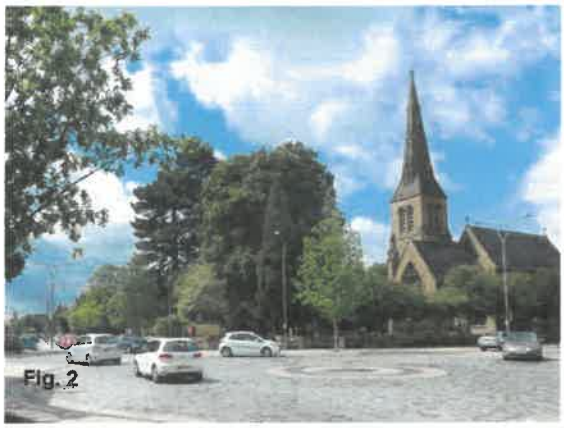
Fig. 2

**Lower Than Average Benefits from Trees**

Usually, the benefits provided by a tree will only be significantly reduced below the 'average benefits' that are typical for the species, age and situation, if the life of the benefits is likely to be shortened, perhaps because the tree is declining or dead. That is not to say that a disbenefit, such as undesirable shading, lifting of a footpath, or restricting the growth of other trees, should not also be considered in the balance of costs and benefits.

The horse chestnut tree in Figure 3 has recently died, and over the next few years, may provide valuable habitats. However, for this tree species and the relatively fast rate at which its wood decays, the lifetime of these benefits is likely to be limited to only a few years. This tree has an already reduced value that will continue to reduce rapidly over the coming five to ten years at the same time as the Risk of Harm is expected to increase. There will be changes in the benefits provided by the tree as it degrades. Visual qualities are likely to reduce while the decaying wood provides habitats for a range of species, for a short while at least. There are no hard and fast measures of these benefits and it is for the tree manager to decide what is locally important and how it might be balanced with the risks.

Where a risk is within the Tolerable Region and the tree confers lower than average benefits, it might be appropriate to consider implementing risk control while taking account of the financial cost. Here, VOSL can be used to inform a decision on whether the cost of risk control is proportionate. Example 3 below puts this evaluation into a tree management context.

There will be occasions when a tree is of such minimal value and the monetary cost of risk reduction so low that it might be reasonable to further reduce an already relatively low risk. Conversely, a tree might be of such considerable value that an annual risk of death greater than 1/10 000 would be deemed tolerable.

Occasionally, decisions will be made to retain elevated risks because the benefits from the tree are particularly high or important to stakeholders, and in these situations, it might be appropriate to assess and document the benefits in some detail. If detailed assessment of benefits is required, there are several methodologies and sources of information (Forest Research 2010).

**Delegating Risk Management Decisions**


Fig. 3

Understanding of the costs with which risk reduction is balanced can be informed by the risk assessor's knowledge, experience and on-site observations, but the risk management decisions should be made by the tree manager. That is not to say that the tree manager should review and agree every risk control measure, but when delegating decisions to surveyors and other staff or advisors, tree managers should set out in a policy, statement or contract, the principles and perhaps thresholds to which trees and their associated risks will ordinarily be managed.

Based on the tree manager accepting the principles set out in the QTRA Practice Note and or any other specific instructions, the risk assessor can take account of the cost/benefit balance and for most situations will

be able to determine whether the risk is ALARP when providing management recommendations.

**Table 4. QTRA Advisory Risk Thresholds**

| Thresholds | Description | Action |
|---|---|---|
| | **Unacceptable** Risks will not ordinarily be tolerated | • Control the risk |
| 1/1,000 | | |
| | **Unacceptable** (where imposed on others) Risks will not ordinarily be tolerated | • Control the risk<br>• Review the risk |
| | **Tolerable** (by agreement) Risks may be tolerated if those exposed to the risk accept it, or the tree has exceptional value | • Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value<br>• Review the risk |
| 1/10 000 | | |
| | **Tolerable** (where imposed on others) Risks are tolerable if ALARP | • Assess costs and benefits of risk control<br>• Control the risk only where a significant benefit might be achieved at reasonable cost<br>• Review the risk |
| 1/1 000 000 | | |
| | **Broadly Acceptable** Risk is already ALARP | • No action currently required<br>• Review the risk |

**QTRA Informative Risk Thresholds**

The QTRA advisory thresholds in Table 4 are proposed as a reasonable approach to balancing safety from falling trees with the costs of risk reduction. This approach takes account of the widely applied principles of ALARP and ToR, but does not dictate how these principles should be applied. While the thresholds can be the foundation of a robust policy for tree risk management, tree managers should make decisions based on their own situation, values and resources. Importantly, to enable tree assessors to provide appropriate management guidance, it is helpful for them to have some understanding of the tree owner's management preferences prior to assessing the trees.

A Risk of Harm that is less than 1/1 000 000 is Broadly Acceptable and is already ALARP. A Risk of Harm 1/1 000 or greater is unacceptable and will not ordinarily be tolerated. Between these two values, the Risk of Harm is in the Tolerable Region of ToR and will be tolerable if it is ALARP. In the Tolerable Region, management decisions are informed by consideration of the costs and benefits of risk control, including the nature and extent of those benefits provided by trees, which would be lost to risk control measures.

For the purpose of managing risks from falling trees, the Tolerable Region can be further broken down into two sections. From 1/1 000 000 to less than 1/10 000, the Risk of Harm will usually be tolerable providing that the tree confers 'average benefits' as discussed above. As the Risk of Harm approaches 1/10 000 it will be necessary for the tree manager to consider in more detail the benefits provided by the tree and the overall cost of mitigating the risk.

A Risk of Harm in the Tolerable Region but 1/10 000 or greater will not usually be tolerable where it is imposed on others, such as the public, and if retained, will require a more detailed consideration of ALARP. In exceptional circumstances a tree owner might choose to retain a Risk of Harm that is 1/10 000 or greater. Such a decision might be based on the agreement of those who are exposed to the risk, or perhaps that the tree is of great importance. In these circumstances, the prudent tree manager will consult with the appropriate stakeholders whenever possible.

## 5. EXAMPLE QTRA CALCULATIONS AND RISK MANAGEMENT DECISIONS

Below are three examples of QTRA calculations and application of the QTRA Advisory Thresholds.

**Example 1.**

| | Target | | Size | | Probability of Failure | | Risk of Harm |
|---|---|---|---|---|---|---|---|
| Range | 6 | x | 1 | x | 3 | = | <1/1 000 000 |

Example 1 is the assessment of a large (Size 1), unstable tree with a probability of failure of between 1/100 and >1/1 000 (PoF 3). The Target is a footpath with less than one pedestrian passing the tree each week (Target 6). The Risk of Harm is calculated as less than 1/1 000 000 (green). This is an example of where the Target is so low consideration of the structural condition of even a large tree would not usually be necessary.

**Example 2.**

| | Target | | Size | | Probability of Failure | | Risk of Harm |
|---|---|---|---|---|---|---|---|
| Range | 1 | x | 4 | x | 3 | = | 1(2T)/50 000 |

In Example 2, a recently dead branch (Size 4) overhangs a busy urban high street that is on average occupied constantly by two people, and here Multiple Target occupation is considered.

Having an average occupancy of two people, the Risk of Harm 1(2T)/50 000 (yellow) represents a twofold increase in the magnitude of the consequence and is therefore equivalent to a Risk of Harm 1/20 000 (yellow). This risk does not exceed 1/10 000, but being a dead branch at the upper end of the Tolerable Region it is appropriate to consider the balance of costs and benefits of risk control. Dead branches can be expected to degrade over time with the probability of failure increasing as a result. Because it is dead, some of the usual benefits from the branch have been lost and it will be appropriate to consider whether the financial cost of risk control would be proportionate.

**Example 3.**

| | Target | | Size | | Probability of Failure | | Risk of Harm |
|---|---|---|---|---|---|---|---|
| Range | 3 | x | 3 | x | 3 | = | 1/500 000 |

In Example 3, a 200mm diameter defective branch overhangs a country road along which travel between 470 and 48 vehicles each day at an average speed of 50kph (32mph) (Target Range 3). The branch is split and is assessed as having a probability of failure for the coming year of between 1/100 and 1/1 000 (PoF Range 3). The Risk of Harm is calculated as 1/500 000 (yellow) and it needs to be considered whether the risk is ALARP. The cost of removing the branch and reducing the risk to Broadly Acceptable (1/1 000 000) is estimated at £350. To establish whether this is a proportionate cost of risk control, the following equation is applied. £2 000 000 (VOSL) x 1/500 000 = £4 indicating that the projected cost of £350 would be disproportionate to the benefit. Taking account of the financial cost, risk transfer to arborists and passers-by, the cost could be described as being grossly disproportionate, even if accrued benefits over say ten years were taken into account.

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