

The Brow - Technical Team  
 Monthly Report No.3 – FEB 2024

<b>Report No.</b>	03	<b>Author:</b>	Malcolm Perrin
		<b>Date:</b>	06 FEB 2024

<b>Circulation:</b>	<p>All members of the Technical Team plus...</p> <p>Chair for KLTC – Paul Cassell (PC)          Clerk for KLTC - Kevin Price (KP):</p>
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<b>Aims and Objective:</b>	<p>Kirkby Lonsdale Town Council (KLTC) have set up a Technical Team to review existing technical documentation in its possession, with the aim of re-opening The Brow footpath using a cost-effective approach that is low risk and safe for Public access.</p> <p>The KLTC Technical Team was officially announced at a monthly KLTC meeting on 08NOV23. The team comprises of the following members, each skilled and experienced in their own special field...</p> <ul style="list-style-type: none"> <li>• <i>Malcolm Perrin (Lead) – Civil Engineer &amp; KL Town Councillor;</i></li> <li>• <i>Robin Ree – Semi-Retired Engineer &amp; KL Town Councillor;</i></li> <li>• <i>Mike Marczynski – Industrial Chemist &amp; KL Town Councillor;</i></li> <li>• <i>Nick Hampson – Civil Engineering &amp; Chartered Surveyor;</i></li> <li>• <i>John Peel – Retired Construction Director</i></li> </ul> <p>The Team will meet regularly to examine a ‘way forward’ and gather evidence to fill gaps in past reports. The Lead will submit a progress report to the KLTC Chair each month detailing costs, progress and evaluations for the Town Council to approve for development.</p>
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Item	Description	Action	Date for completion
<b>1.</b>	<b>Health, Safety, Environment &amp; Quality (HSEQ):</b>		
a.	<p><u>Statement:</u> All work requested by Kirkby Lonsdale Town Council (KLTC) Technical Team will be planned, managed and monitored in accordance with current Health &amp; Safety legislation, including...</p> <ul style="list-style-type: none"> <li>• <i>Health and Safety at Work Act (HSWA) 1974;</i></li> <li>• <i>Management of Health and Safety at Work Regulations 1999; and</i></li> <li>• <i>The Construction (Design and Management) Regulations 2015</i></li> </ul> <p>... to ensure the health, safety and welfare at work of their employees and contractors.</p> <p>All Contractors will be asked to prepare a Risk Assessment and Method Statement (RAMS) for approval by a member of the Technical Team before work can commence on site.</p> <p>RAMS will include...</p> <ul style="list-style-type: none"> <li>• <i>Proof of training for the task;</i></li> <li>• <i>Current certification for any plant and equipment being used;</i></li> <li>• <i>Proof of adequate Public Liability insurance.</i></li> </ul>	NOTE	
b.	<p>Does the Town Council have Directors and Officers insurance...?</p> <p><i>Directors' and officers' liability insurance – also known as D&amp;O insurance – covers the cost of compensation claims made against your business's directors and key managers (officers) for alleged wrongful acts.</i></p> <p><i>Action: KP will contact our insurers Zurich Insurance and W&amp;FC for advice and report back at next KLTC meeting.</i></p>	KP	Ongoing
c.	<p><u>Incidents / Adverse events to date:</u></p> <p>None</p>		
<b>2.</b>	<b>Technical / Engineering:</b>		
a.	<p>Stage 1a – Tree management and vegetation clearance To proceed without delay. Vegetation clearance started in OCT23.</p> <p><del>YDNPA request a Tree Health &amp; Risk Survey (THREATS) to be carried out and submitted before the end of JAN24. This report will inform KLTC of any dangerous or trees at a high risk to the footpath.</del></p> <p><del>Arbtech Consulting Ltd have submitted their fee proposal of £1259 + VAT for a site survey and written report. KLTC will be asked to approve this proposal at the next TC meeting on 10JAN24. COMPLETE</del></p>	MP	10JAN24



	<p>All survey data will be analysed by MHL and presented on drawings, photographs and spreadsheets. Further surveys will be required at the top of the embankment to check the condition of footpath support (existing gabions and concrete edge beams). It is likely that part of the footpath is ‘undercut’ because of drainage issues washing away ‘fines’ in the stone support. To be investigated when good weather allows and vegetation can be cleared.</p> <p>At some stage a monitoring survey is required at river level to assess the state and extent of water erosion along the riverbank. However, this is not within the scope of Stage 1b. monitoring.</p>	NOTE	
<b>3.</b>	<b>Communication / Request for Information (RFI)</b>		
a.	<p>It is good practice and recommended that all hard copies of archive material be digitised.</p> <p><i>Action: NH is working hard, turning all hard copy files to .pdf digital files.</i></p>	NH	Ongoing
b.			
c.	<p>Request information from Fairhurst...</p> <ul style="list-style-type: none"> <li>• Reports and surveys for future Pre-Construction Information (PCI);</li> <li>• Borehole logs, trial pit logs, intrusive work on The Brow;</li> <li>• Topographical survey, condition surveys, drawings – all in AutoCAD format.</li> <li>• Data and details of software used in slope stability assessment.</li> </ul>	MP	On HOLD
d.			
e.	<p>Request costs expended on The Brow to date from Town Clerk Kevin Price. It is our duty as a sub-group of KLTC to record all public monies received and spent on this Project and to remain transparent at all times.</p> <p><i>ACTION: New Town Councillor Nigel Martin (NM), a retired Chartered Accountant will be asked to assist with collating costs for analysis from 2016 – to date.</i></p>	NM	Ongoing
f.	<p><del>MP delivered 1TB hard drive to Richard Walters of Commendium Ltd by hand and requests all survey data from the last two years monitoring of The Brow be downloaded for future use. Download will be ready soon. COMPLETE</del></p>	MP	15JAN24
g.	<p>‘Internxt’ app is now being used by five members of the Technical team to store and share all information online.</p>	NOTE	
h.	<p>Open communications with local WFC Councillors Ian Mitchell and Hazel Hodgson to inform and take advice on future contact with WFC.</p>	MP	Ongoing
<b>4.</b>	<b>Programme / Progress</b>		
a.	<p><del>Drone survey carried out on Friday 01DEC23 with NH and small team. Survey was Free of Charge (FOC). Early results show helpful definition of the slope and footpath for future monitoring for movement. COMPLETE</del></p>	NOTE	Complete
b.			

c.	Arbtech Ltd to carry out a THREATS arboriculture site survey 18JAN24 and produce a written report on the health & safety of trees requiring attention on The Brow. <b>COMPLETE</b>	NOTE	<b>Complete</b>
d.	Planned work for the coming weeks includes a non-intrusive Drainage survey along the footpath and behind the stone wall to prove the flow of rainwater over The Brow and into the River Lune. The concern is that surface water is percolating under the footpath and washing away fine soils supporting the edge of footpath. New drainage pipes will be needed to direct water safely over the embankment to the river.  Malcolm Hughes Land Surveyors Ltd will be instructed to carryout a drainage survey along The Brow footpath and in the Church Glebe Field using Ground Penetrating Radar (GPR) techniques in APR 2024.	NOTE	
<b>5.</b>	<b>Commercial</b>		
a.	Malcolm Hughes Land Surveyors Ltd (MHL) submitted a successful bid presenting low cost with an immediate start and are therefore appointed to carry out all survey monitoring for Stage 1b. along The Brow for the next 12months.  MHL fees for Stage 1b. only are:- £995 first visit to establish baseline, then £995 / monthly visit to site for 6 months. Costs shown do not include VAT at 20%.  Arbtech Consulting Ltd charged £1259 + VAT for their THREATS Survey.	NOTE	
b.	<del>Tenders to be sent out to three Arboriculturists to quote for cutting and trimming mature trees on The Brow sloping bank.</del>  Await arboriculturist report and advice from YDNPA. <b>COMPLETE</b>	RR/JP	FEB24
<b>6.</b>	<b>Legal</b>		
a.	The Title Register and Title Plan was purchased by NH for KLTC. Documents show clear areas of ownership and adjacent land rights.  Land known as 'Ruskins View' immediately North of the Radical Steps is owned by KLTC but was never registered at the Land Registry. NH recommends to the Council that the property is registered, thus recording and safeguarding the title to the land for future generations.  The application cost for this is small (potentially as little as £20), but it will involve getting at minimum a formal copy of the deeds from Kendal Archive Centre (£15 for the copy) and the production of a formal plan to identify the area on current Ordnance Survey Master Map data (which NH will do at just the cost of the OS data, which will probably be < £50.  To be approved by KLTC at 10JAN24 meeting. <b>APPROVED</b>	NH  PC/KLTC	Ongoing  <b>APPROVED</b>
b.	<del>Responsibility for ownership and maintenance of the footpath surface and land 150mm below ground level needs clarification.</del> JP will investigate further... <b>Complete</b> KLTC own the land;	JP	<b>31DEC23</b>

	<p>WFC have liability for maintenance – (the top two spits – 150mm) YDNPA regulate the area – D2R Survey was commissioned by the NPA.</p> <p><i>Action: NH to discuss issues and responsibilities with known contact Alison Lea, Planning Inspector – specialist in access and rights of way.</i></p>	NH	Ongoing
<b>7.</b>	<b>Stakeholders</b>		
a	<p><i>MP met with Merlin Hibbs (MH) on 05JAN24 for an informal walk around St Mary's church grounds and along The Brow footpath to discuss issues being raised by St Marys and this Technical Team.</i></p> <p><i>Consideration was given to a future drainage survey and costs, motte retaining wall monitoring for movement and removal of the timber fence near the Gazebo.</i></p> <p><i>MH and MP later exchanged missing survey information via Email (topographical survey, ground investigation reports, geotechnical reports) in a positive effort to collaborate and reopen The Brow footpath as soon as is practicably possible.</i> <b>COMPLETE</b></p>	MP	<b>COMPLETE</b>
<b>8.</b>	<b>Friends of Save Ruskins View</b>		
a.	<p>KLTC, the Technical Team and Friends of Save Ruskins View (FSRV) will meet on 11JAN24 to discuss future funding plans.</p> <p>Productive meeting between both Groups. Obvious conclusion is to work closely together as a united Project to Save Ruskins View.</p> <p>The Technical Team have £10 000 from The Friends to enable Phase 1 to continue without disruption.</p> <p>Future shared communication about The Brow and SRV will be published in the monthly AKL Journal.</p> <p>Town Councillor Stuart Taylor will update local residents with regular posts of reports and images on KLTC website and Facebook.</p> <p><b>Malcolm Perrin</b> <b>Technical Team Lead</b> <b>10JAN24</b></p> <p>End of document</p>		

**Tree Safety Report (Negative/Hazardous reporting only)**

**Malcolm Perrin**

Land at The Brow,

Kirkby Lonsdale,

Cumbria,

LA6

30 January 2024

Charlie Moore BSc (Hons) MArborA AMRSB

## Table of Contents

Executive Summary.....	2
Particulars of Instruction .....	2
Author .....	2
Survey Methodology .....	2
Findings .....	3
Limitations .....	4
Caveats .....	4
Appendices .....	5
Appendix 1: Schedule of Trees .....	6
Appendix 2: Tree Location Plan drawing (not to scale).....	9
Appendix 3: Tree work guidance .....	11
Appendix 4: THREATS – Risk evaluation sum matrix .....	15
Appendix 5: Definitions .....	18
Appendix 6: Photos.....	20
Document Production Record.....	23

## Executive Summary

A tree safety inspection of all trees within the boundaries provided was undertaken. Only trees with significant hazards and/or environmental conditions that required remedial measures, or a more frequent inspection regime have been highlighted within this report. The objective of the inspection is to evaluate the risk of harm/damage arising from tree/component (e.g., branch) failure.

## Author

I am Charlie Moore, an Arboricultural and Ecological Consultant at Arbtech Consulting Ltd. I hold a BSc Honors degree in Arboriculture and Urban Forestry and a BTEC Level 3 Extended Diploma in Countryside Management and have professional experience in arboriculture spanning 4 years. I also hold a Professional and Associate grade memberships with the Arboricultural Association and Royal Society of Biology respectively. I am also qualified under LANTRA with the Professional Tree Inspector ticket.

The advice below and appended is underwritten by our Professional Indemnity insurance for the business practice of Arboricultural Consultancy in the sum of one million Pounds Sterling in each and every claim.

## Survey Methodology

For the landowner/steward of the site to be deemed as acting in accordance with their statutory Duty of Care, trees growing on their land should be inspected on a regular basis by a competent person. This regular inspection should be recorded in an auditable fashion. This survey report constitutes a single inspection which can be included in the site's inspection record.

As requested by The Client, the objective of the survey was to inspect all trees and identify and record any apparent signs of structural or physiological markers that may be associated with a raised probability of whole tree/component (e.g., branch) failure. All trees/tree groups that have been highlighted as requiring remedial work are located on a plan and observations pertaining to size, life stage (age), physiological condition and structural condition were recorded.

Identified hazards are assessed using the Tree Hazard: Risk Assessment and Treatment System (THREATS).

THREATS is a framework for systematically and consistently quantifying an informed arboricultural judgement allowing tree managers to arrive at their decision through a logical, defensible, and transparent process. Where the surveyor has noted significant conditions/defects/features on a tree during the inspection, the risk has been evaluated using the THREATS methodology.

The system consists of three parts, i) Tree Inspection Record, ii) Risk Evaluation Sum, iii) Implementation of Control Measures. All of which have multiple stages. The full details of the scoring matrix can be found in Appendix 4. Any recommendations for remedial works, if required, are prioritized using the accrued score.

The survey was made at ground level using visual observation only. Detailed examinations such as climbing inspections and decay detection (beyond the use of a sounding mallet/probing instrument) were not employed, though may form part of the survey's management recommendations. All observations were made from within the curtilage of the site or from the public realm where possible.

The probability of structural failure is impossible to predict with certainty. It can only ever be an estimation based on the surveyor's knowledge, experience, understanding, and best judgment. Trees that have been surveyed by a competent, professional arboriculturist, in line with up-to-date best practice, while making proportionate and reasonable management recommendations enable tree owners/managers to meet their duty of care.

Natural conditions will vary and change over time, so any assessment of the likelihood of failure of a tree or branch will become less reliable as more time passes. Trees are dynamic living organisms that change both physiologically and structurally over time - sometimes significantly. The observations and recommendations during the survey can therefore only be considered valid for a period of up to two years (18 months in high-risk areas such as schools or care homes), and the subject trees should be re-inspected within a reasonable timeframe and immediately following storm-force winds at/exceeding Beaufort Wind Scale 7 (32- 38mph) which may have caused partial failure and/or increase the likelihood of structural failure.

## Findings

A total of 3No. individual trees and 2No. groups of trees were surveyed. Details for each are provided in the Schedule of Trees (Appendix 1).

## Limitations

Trees were inspected by using visual observation from ground level only. Trees were not climbed or inspected below ground level. Estimations have been made about the location, physical dimensions and characteristics of inaccessible trees. Trees have been grouped where it is expedient to do so. Unless specifically stated and requested to do so we have performed no statutory protection checks, such as Conservation Areas (CA) or Tree Preservation Order (TPO). Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

## Caveats

1. This report is nullified if any remedial works not advised within this report are undertaken on any area of the site, after the date of survey.
2. The report is only valid from the date of inspection and any deletion, editing or alteration of the document will void it in its entirety.
3. The responsibility for any work undertaken on the basis of the recommendations of this report does not form part of this contract. No responsibility is assumed by the author of this report or by Arbtech for any legal matters that may arise as a consequence.
4. The report is not valid in adverse or unpredictable weather conditions or for any failure due to Force Majeure.
5. No liability is assumed by the author or by Arbtech for any misuse, misinterpretation or misrepresentation of the information contained herein.
6. This report has been compiled using only the information made available to the author as of the above date of inspection.
7. The assessment, unless described as “detailed” was of a preliminary nature, conducted from the ground only; no soil samples were taken for analysis, and no trees were climbed or inspected below ground level (including roots).
8. Arbtech is not responsible for any works other than those invoiced for.
9. All tree work is to be undertaken in accordance with British Standard BS 3998:2010, Recommendations for tree work.
10. Prior to any and all specified tree works it is the duty of the landowner/steward and/or contractor to undertake a check to see if there are any statutory protections upon the land and trees.
11. All tree works are to be undertaken at an appropriate time and any and where necessary a suitably qualified ecologist has been consulted so as not to damage or destroy any protected species and/or habitats.

## Appendices

The following documents were released to the Client as appendices in this report:

- Appendix 1: Schedule of Trees
- Appendix 2: Tree Location Plan drawing
- Appendix 3: Tree work guidance
- Appendix 4: THREATS – risk evaluation sum matrix
- Appendix 5: Definitions
- Appendix 6: Photos

If you require clarification of the information contained herein, please do not hesitate to contact us via 01244 661170.

Yours Sincerely,



Charlie Moore BSc (Hons) MArborA AMRSB

Arboricultural and Ecological Consultant

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## Appendix 1: Schedule of Trees

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Site Address Land at The Brow, Kirkby Lonsdale, Cumbria, LA6  
 Date 18-Jan-24  
 Surveyor Charlie Moore  
 Weather Conditions Fair and Calm (Beaufort Scale: 1)



Tree No.	Tag No	Species	Age Class	Height (m)	Crown Spread radius (m)	No of Stems	Calculated Stem Diameter (mm)	Failure Indicators Present	Failure indicator most hazardous	FS	TS	IS	Risk score	Threat Cat.	Priority Code	Mitigation	Observations
G01		Various (See comments for details)	Mature	20	6	1	1300	Dieback; Dead wood; Fractured limbs	Dieback	2	7	4	56	2	3Y	General pruning; Reinspection (Remove significant deadwood above 40mm diameter wherever present over paths - reinspect group within 18 months to ascertain presence or absence of ash dieback)	Group comprised of several trees, located on a bank ranging from 60 to 15 degrees from vertical; recorded dimensions denote the maximum for the group; unable to fully inspect the group due to the slope; species include ash, oak, holly and pine; epicormic growth in the crown of individual ash trees denoting possible ash dieback inoculation.
G02		Various (See comments for details)	Mature	23	6	1	1300	Dieback; Dead wood; Fractured limbs; Prolific ivy	Dieback	8	15	4	480	4	13W	General pruning; Reinspection; Tree removal; Sever ivy (Remove significant deadwood above 40mm diameter wherever present over paths - fell ash trees with ash dieback adjacent to the path - sever ivy to aid in future reinspection)	Group comprised of several trees, located on a bank 15 degrees from vertical; recorded dimensions denote the maximum for the group; unable to fully inspect the group due to the slope; species include ash, beech and holly; epicormic growth in the crown of individual ash trees denoting ash dieback inoculation.
T01		Scots Pine (Pinus sylvestris)	Mature	21	7	1	1000	Prolific ivy; Other	Other	8	7	4	224	3	A	Localised pruning; Sever ivy (Remove failed limb at 12m on southern canopy - sever ivy to aid in future reinspection.)	Large tree located on a step back approximately 60 degrees from vertical; historically failed limb in the southern crown; ivy cladding from base to apex.
T02		Sycamore (Acer pseudoplatanus)	Mature	18	8	1	1200	Prolific ivy; Other	Prolific ivy	0.8	15	10	120	2	3Y	Localised pruning; Sever ivy (Sever ivy to aid in future reinspection - remove significant deadwood above 40mm diameter wherever present above path.)	Large tree located on a step back approximately 15 degrees from vertical - unable to thoroughly inspect the stem and base due to the slope; naturally occurring deadwood in the canopy; ivy cladding from base to apex.
T03		Common Ash (Fraxinus excelsior)	Early mature	10	1	1	120	Dead wood	Dead wood	2	15	4	120	2	3Y	Tree removal (Fell to safe height)	Standing deadwood

<b>Key:</b>	
<b>Tree No.</b>	A unique number or reference to identify trees or groups as shown on associated plans.
<b>Tag No.</b>	A unique number on a physical tag attached to the tree.
<b>Species</b>	Common and/or taxonomic name.
<b>Age Class</b>	Age classification: Young (Y); Semi-mature (SM); Early Mature (EM); Mature (M); Veteran (V).
<b>Height</b>	The height of the tree rounded to the nearest meter (m).
<b>Crown Spread</b>	An approximation of the extents of the crown, rounded to the nearest meter (m).
<b>No of stems</b>	The number of stems forming the primary structure of the tree.
<b>Calculated stem diameter</b>	The measured stem diameter for, a single stemmed tree taken at 1.5m above ground level unless otherwise specified; a calculated stem diameter indicative of a multi stemmed tree or group. Recorded in millimetres (mm).
<b>Failure indicators present</b>	List of all significant features that indicate an increased risk of failure for the tree or group.
<b>Failure indicator most hazardous</b>	The most significant indicator of increased failure for the tree or group.
<b>FS</b>	Features that may be considered defects are considered and scored in relation to species/clone history, established failure criteria and time of year.
<b>TS</b>	The impact radius of the identified defect is considered in relation to potential targets. If on a vehicular transit line, forward visibility of the driver is considered along with the potential for the vehicle to be stationary for a period. If children and/or the elderly or infirm are likely to be present, the target category score is upgraded by one category.
<b>IS</b>	The likely damage/harm that would result from the failed part striking the target is considered. This includes the height/momentum and size of the scored part upon impact.
<b>Risk score</b>	The function of the FS, TS and IS (i.e. Risk Evaluation=Failure Score X Target Score X Impact Score).
<b>Threat cat.</b>	Numerical category ranging between 1 (insignificant) and 7 (extreme), as set out in table 4.
<b>Priority Code</b>	The timescale in which the mitigation work/works is recommended to be completed within.
<b>Mitigation</b>	Proposed mitigation works proposed to reduce the identified risks to within an acceptable range.
<b>Observations</b>	Notes and general comments on the structure and condition of the tree as well as its environment (where appropriate).

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Appendix 2: Tree Location Plan drawing (not to scale)

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**Threat Categories**

These are categorised in accordance with the Tree Hazard Risk Evaluation and Treatment System (THREATS) as published by Fortes Land Arboricultural Consultancy, June 2010.

Threat Cat. 1-2 Trees identified as having a THREAT Category of 'Insignificant' or 'Minimal' requiring management works within 3 years or 3-5 years respectively.

Threat Cat. 3 Trees identified as having a THREAT Category of 'Signif' requiring management works within 1-2 years.

Threat Cat. 4 Trees identified as having a THREAT Category of 'Moderate' requiring management works within 13 weeks.

Threat Cat. 5-7 Trees identified as having a THREAT Category of 'Significant', 'Serious' or 'Extreme' requiring management works within 4 weeks, 7days or immediately respectively.

**THREATS Tree Report**

Please refer to Arblech Consulting Ltd. THREATS Tree Report and for full details on all surveyed trees, hedgerows and major shrub groups. All trees were surveyed and categorised in accordance with the Tree Hazard Risk Evaluation and Treatment System.

It is important that the Report is fully understood and any recommended mitigation works are undertaken within the specified time scales.



Project: **Land at The Brow, Kirkby Lonsdale, Cumbria, LA6**

Client: **Malcolm Perrin**

Drawing: **Tree Location Plan**

Based on: **Aerial Image**

Drawing No: **Arblech TLP 01** Rev:

Date: **Jan 2024** Scale: **Not to Scale** Drawn: **CMJM**

**Key:**

Tree	T01	Trunk:	○	Threat Cat. 1-2 trees	○
Hedg.					
Threat Cat. 3-4 trees		Threat Cat. 3-4 groups			

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## Appendix 3: Tree work guidance

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**Site Address** Land at The Brow, Kirkby Lonsdale, Cumbria, LA6  
**Date** 18-Jan-24  
**Surveyor** Charlie Moore  
**Weather Conditions** Fair and Calm (Beaufort Scale: 1)



Tree No.	Tag No	Species	Priority Code	Mitigation
G01		Various (See comments for details)	3Y	General pruning; Reinspection (Remove significant deadwood above 40mm diameter wherever present over paths - reinspect group within 18 months to ascertain presence or absence of ash dieback)
G02		Various (See comments for details)	13W	General pruning; Reinspection; Tree removal; Sever ivy (Remove significant deadwood above 40mm diameter wherever present over paths - fell ash trees with ash dieback adjacent to the path - sever ivy to aid in future reinspection)
T01		Scots Pine ( <i>Pinus sylvestris</i> )	A	Localised pruning; Sever ivy (Remove failed limb at 12m on southern canopy - sever ivy to aid in future reinspection.)
T02		Sycamore ( <i>Acer pseudoplatanus</i> )	3Y	Localised pruning; Sever ivy (Sever ivy to aid in future reinspection - remove significant deadwood above 40mm diameter wherever present above path.)
T03		Common Ash ( <i>Fraxinus excelsior</i> )	3Y	Tree removal (Fell to safe height)

## Tree removal

A tree should be felled in one piece only when there is no significant risk of damage to people, property or protected species (see Annex A).

Where restrictions (e.g. lack of space, buildings, other features, land ownership or use, or other trees which are to be retained) cannot be overcome, trees should be dismantled in sections.

This also applies where a tall stump is being retained but where branches are to be removed/pruned.

Extensively decayed trees can be unpredictable when they are being felled, and special precautions should therefore be taken, such as the use of a winch to guide the direction of fall.

## Stump removal – stump grinding

Stump grinding should be to a minimum of 300mm deep or to extend through the base of the stump leaving the major roots disconnected if the intention is to reduce the potential for the spread of Honey fungus.

The grinding residue should be treated as arising's and removed from site.

*NOTE Mechanical destruction of a stump by stump grinding is less disruptive to the site than digging out.*

The hole left by stump removal, should be filled with soil or other material. The filling should be appropriate for future site usage, and for any surface treatment that is to be installed.

Where future plant growth is desired, the backfill material should be firmed in 150 mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

## Stump removal - digging

Stump removal by digging out should include disposal/utilization of woody material (see Clause **13**).

*NOTE Whether done by hand or machine, digging out can cause severe disturbance of the site.*

Where possible, when winching out a stump, a ground or other type of anchor should be used rather than a tree to be retained. If there is no alternative to using such a tree as an anchor, appropriate protective measures should be adopted.

## After stump removal

The hole left by stump removal, whether by digging out or grinding, should be filled with soil or other material. The filling should be appropriate for future site usage and for any surface treatment that is to be installed.

Where future plant growth is desired, the back fill material should be firmed in 150mm layers by treading, avoiding excessive compaction and destruction of the soil structure.

## Cut Ivy

Cutting of ivy is to be undertaken using hand tools such as hand saws or secateurs to prevent damage to the bark of the tree; the use of chain saws is prohibited. A 300mm high section of ivy is to be cut and removed from within 1m of ground level.

## Protected Species

### Conservation Status of British Bats

The general consensus in Britain and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline in UK Government within the UK Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former populations levels are investigated.

### Legal Status of British Bats

Given the above position all British bats as well as their breeding sites and resting places enjoy national and international protection.

All bat species in the UK are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5. All bats are also listed on Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection. Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)\* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not).
- Damage, destroy or obstruct access to bat roosts.

- Possess or transport a bat or any part of a bat, unless acquired legally.
- Sell, barter or exchange bats, or parts of bats.

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licensed.

*\*The regulations that delivered by the UK's commitments to the Habitats Directive.*

### **Breeding birds**

All nesting birds are protected under the Wildlife and Countryside Act (as amended) 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. Furthermore, a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate “no-go” buffer zones around such nests – typically out to 100m.

Planning policy guidance on the treatment of species identified as priorities under the biodiversity action program suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments

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## Appendix 4: THREATS – Risk evaluation sum matrix

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## Risk Evaluation Sum

**Table A: Failure Score**

Score	Likelihood of failure	Example indicators
50	Imminent/Immediate	Uprooting; Extreme root loss; Collapsing structure (i.e. primary failure has already occurred)
8	Probable/Soon	Altered exposure; Primary decay fungus; Severe inclusive bark/root loss; Fragile dead wood
2	Likely, foreseeable	Lapsed pollard; Overweight/subsiding limbs; Poor stem taper; Dieback
.8	Potentially with time	Early development of inclusive bark; Robust dead wood
0	None apparent	No significant defects observed

**Table B: Target Score**

Score	Value	Static target examples	Target occupancy examples
40	Very High	Building 24 hour use	Constant vehicular traffic/busy playground
25	High	Building 12 hour use, ≥11Kv power lines	Frequent vehicular traffic/constant pedestrian use
20	Medium	Building/structure occasional use, <11Kv lines	Peak times traffic/intermittent use, PFV, e.g. commuter run
15	Low	Garage, Summer house, Listed wall	Occasional traffic/sporadic use, GFV e.g. quiet rural road
7	Very Low	Unlisted wall, paving, garden features	Infrequently used access/public right of way/bridleway
0	None	Grass	Hardly ever used, e.g. remote path

**Table C: Impact Score**

Score	Degree of harm & consequences (examples)	Agent: trees, mm, or branches, kg (NB size/weight for guidance only)		
10	Severe structural damage, vehicles crushed – passenger fatalities very probable	VL	>750mm	>500kg
6	Moderate structural/ severe vehicle damage – fatal/disabling injuries likely	L	350-750mm	50-500kg
4	Minor damage/probable disabling/hospitalising injury to pedestrians	M	100-350mm	10-50kg
1	Fragile objects destroyed, superficial/recoverable injury to pedestrians	S	<100mm	<10kg

## Part 3: Implementation of Control Measures

**Risk Evaluation Sum:** Failure Score X Target Score X Impact Score = Score Range

**Table D:** Appropriate Response

Score range	Threat category	Recommended action & Completion deadline	Code
4000+	7 Extreme	Evacuate/prevent access to impact site, emergency call-out of contractors	E
2001-3999	6 Serious	Close site if practical; arrange for work to be completed within 7 days	7D
1000-2000	5 Significant	Arrange for work to be completed within four weeks maximum	4W
330-999	4 Moderate	Remediate within 13 weeks, reinspect after severe weather event meantime (Inc. gales to Force 7+)	13W
160-329	3 Slight	Reinspect annually /after storms (Force 10+), expect to schedule work within 2 yrs.	A
50-159	2 Minimal	Reinspect within 3 yrs. if public access, schedule work as required	3Y
0-49	1 Insignificant	Reinspect within 5 yrs. if general public access or 3 yrs. if child-specific access & TS ≥20	3/5Y

**Table E:** Outline of Work Required

Control measure	Example indicators
Target management	Target value / vulnerability reduced by exclusion, diversion or relocation: e.g. antisocial Target value / vulnerability reduced by exclusion, diversion or relocation: e.g. antisocial planting / fence off & warn; re-route paths; relocate benches
Further investigation	Decay mapping to establish significance of defect: set results against failure criteria
Install support	Non-invasive brace to support vulnerable member / dividing union
Localised pruning	Reduce weight loading on vulnerable limb (including shortening dead branches to retain habitat)
Limb removal	Prune out dead/damaged/vulnerable growth
General pruning	Reduce crown by specified amount
Crown removal	Leave stem as a standing carcass (consider habitat piling cord wood, preferably in dappled light)
Tree removal	Takedown and fell to ground level (consider habitat piling & also stump grinding)

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## Appendix 5: Definitions

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## **Arboriculturist**

An arboriculturist (or arboricultural consultant) is a person who has, through relevant education, training and experience, gained recognized qualifications and expertise in the field of accurately identifying risk increasing features and managing trees for risk.

## **Tree Safety Report**

The report following a tree survey undertaken by an arboriculturist that records information about the trees on a site, as well as any risk mitigation recommendations.

## **Tree Location Plan**

A Tree Location Plan (TLP) is plan, is typically delivered as a scalable plan and in a .PDF format. However, in some instances this may be delivered as a non-scalable hand draw (sketch) plan, prepared by an arboriculturist for the purposes of visually demonstrating the approximate locations of the surveyed trees.

## **Tree Survey Schedule**

A list of all trees surveyed, regardless of if remedial works have been recommended. detailing a physical description of the tree as well as any features that increase the risk of the tree/feature.

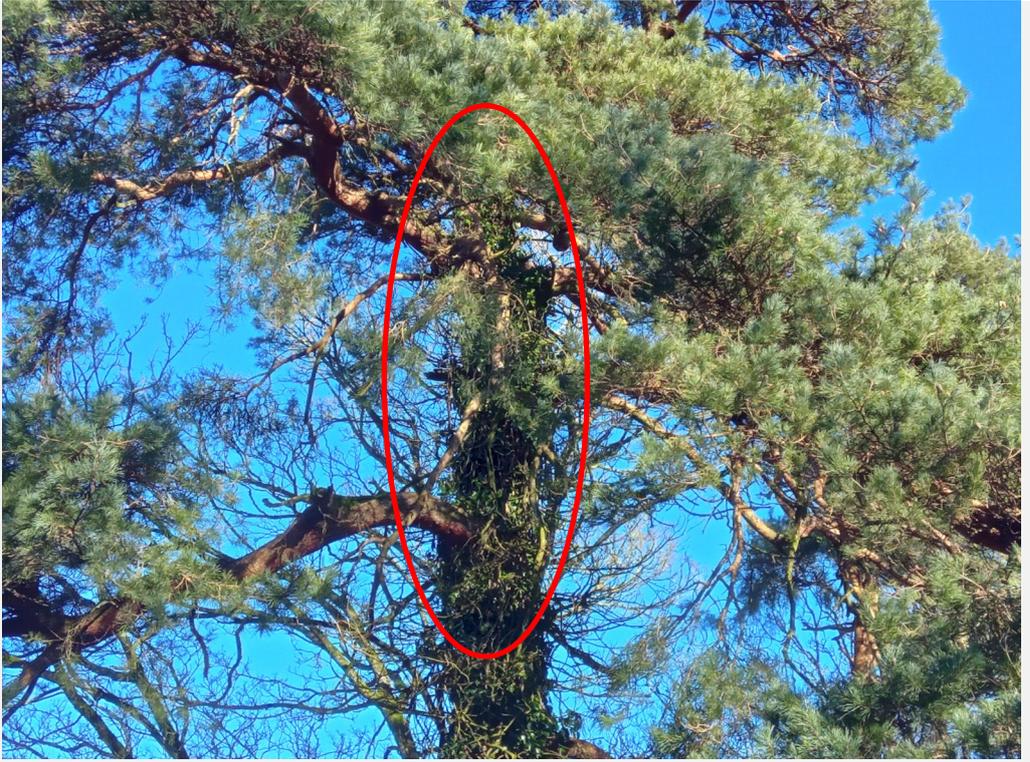
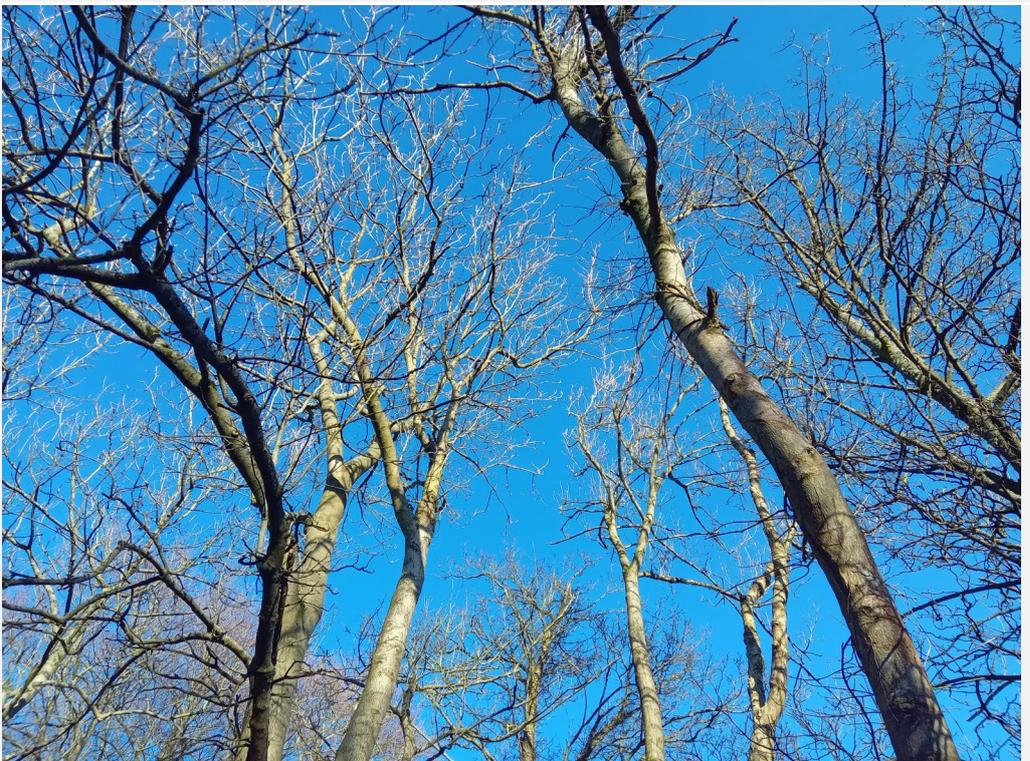
## **Tree Works Schedule**

A summary list only containing trees that have remedial works recommended. intended to be given directly to a contractor/management team.

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## Appendix 6: Photos

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Photo number and description	Photos
1 – dead limb in T01	
2 – Example of symptoms consistent with Ash Dieback present within G02	

3 – T03, a  
dead stem  
located within  
G02



## Document Production Record

Document number	Editor	Signature	Position	Issue number	Date
Arbtech TSR 01	Charlie Moore		Arboricultural and Ecological Consultant	01	30/01/2024

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