TREE RISK ASSESSMENT

Ludgershall Castle

SITE ADDRESS:	Castle St, Ludgershall, Andover SP11 9QT

CLIENT:	English Heritage (West) - Chris Bally (Landscape Manager)
CLIENT TELEPHONE:	07733 308 175

HI-LINE JOB REFERENCE:	RSKHL_8119.23		
PREPARED BY:	Mark Read	**DATE:**	21st July 2023
REVIEWED BY:	David Hansford	**DATE:**	21st July 2023

T: 01392 811338
W: www.hi-line.co.uk
RSK Hi-Line Ltd, Spring Lodge, 172 Chester Road,
Helsby, Frodsham, Cheshire WA6 0AR
trading as Hi-Line, Brookfield Yard,
Tedburn Road, Whitestone Exeter EX4 2HF
Registered in England No. 13765064 VAT No. 397 8356 28

Arboricultural Association Professional Member
QTRA Registered User
VALID Tree Risk-Benefit Management & Assessment

Table of Contents

1 Report Limitations

2 Inspection Methodology

3 Interpreting this report

4 Site Considerations

5 Key Findings

Appendix A: QTRA Assessment Summary

Appendix B: Tree Inspection Inventory

Appendix C: Site Plans and Photographs

1 REPORT LIMITATIONS

1.1 **Reliance –** This Tree and Condition Survey and Risk Assessment has been prepared for the Client and may only be relied on by the Client.

1.2 **Period of Reliance -** Unless agreed otherwise by Hi-Line in writing, the information and findings in this Tree Condition Survey and Risk Assessment shall remain valid for a period of six (6) months from the date of the relevant survey.

1.3 **Third Party works/services -** Hi-Line shall have no liability to the Client (or any third party) for any works, services and/or recommendations set out in this Tree Condition Survey and Risk Assessment to the extent that any such works, services and/or recommendations are carried out or otherwise implemented by a third party not being Hi-Line.

1.4 **Limitation of liability -** Subject to any limitations that are not permitted by law, the aggregate liability of Hi-Line under and in relation to this Tree Condition Survey and Risk Assessment in respect of all claims, losses or damages, whether arising from negligence, breach of contract or otherwise shall be limited to the proceeds of insurance that Hi-Line receives from its insurers in respect of the relevant claims, losses or damages.

1.5 **Site conditions –** Any physical alterations to the condition of the Site after the date of this Tree Condition Survey and Risk Assessment will have the potential to invalidate the findings and recommendations in this Report. In the event of such physical alterations do take place then the Client should contact Hi-Line.

1.6 **Subsidence –** Issues of subsidence and heave have not been considered or addressed in this Tree Condition Survey and Risk Assessment and soil samples have not been taken. If the Client does wish for issues of subsidence to be assessed and reported on, then the Client should contact Hi-Line.

1.7 **Weather, vandalism and accident –** This Tree Condition Survey and Risk Assessment does not take account, or provide any advice in respect, of extremes of weather/climate, vandalism or accident whether the same are physical, chemical or fire related and Hi-Line accepts no liability in respect of the same. For example, and without limiting the foregoing, snow and/or flood conditions can place unpredictable and therefore unforeseen physical strains on trees and vegetation.

2 INSPECTION METHODOLOGY

2.1 A basic visual and limited physical assessment of all specified trees within the identified area was undertaken from ground level, following the general principles laid out in the QTRA methodology (Appendix A), using established industry standard inspection techniques and recorded in the tree inspection inventory (Appendix C).

2.2 If significant defects were observed in relation to targets, then the risk of harm was assessed using the Quantified Tree Risk Assessment (QTRA) methodology (Appendix A).

2.3 The most likely mode of failure is considered regarding each tree, as this represents the highest potential risk of harm.

2.4 The immediate rooting environment and all parts of the trees were considered. Only significant defects or conditions that may require consideration in the future have been commented upon specifically within this report.

2.5 Please note that the visual inspections and risk assessments are made with the over-arching goal of assessing a tree's ability to withstand the range of normal weather events that might reasonably be expected to occur. The estimated risk of harm posed by the trees remains relevant for twelve months in the absence of environmental change (including but not limited to trenching works, major storms, and unapproved pruning).

2.6 No investigations were made of underground parts of the trees. No soil, fungal or plant samples were taken or have been analysed. This report makes no reference to the possible effects of tree roots and shrinkable soils.

2.7 No estimated pedestrian or vehicular usage for any of the site requiring tree inspection has been provided to Hi-Line. This information is typically used to determine the appropriate target range when assessing the risk of failure from trees. Therefore, pedestrian and vehicular usage has been estimated whilst carrying out the survey. Should the client feel that the site usage for pedestrians, vehicles or property values described in this report is or are inaccurate, then the client must notify the same to Hi-Line as soon as possible in order for this report to be amended.

3 INTERPRETING THIS REPORT

3.1 When inspecting your trees, our surveyors assess their condition, the significance of any defects found and recommend works to reduce the risk of harm to site users, structures, and neighbours (safety works). This report will also identify future management issues and recommend works to promote a healthy tree stock to reduce future management costs and potential conflict between trees and neighbours or buildings (management works).

3.2 It is the responsibility of the site owner/manager to manage the risks posed by trees on the site and implement recommendations as appropriate.

3.3 Section 5 of this report (Key Findings) identifies specific problem trees to note, with analysis and recommendations for remedial action. This is cross-referenced to the site plan and supporting images in Appendix C. Appendix B is a prioritised summary that will clearly identify those trees requiring safety and management works. Please note the urgency timescale we advise is for guidance only.

4 SITE CONSIDERATIONS

4.1 **Implementation of works:** All tree works should be carried out in accordance with '*BS 3998: 2010 Tree Work – Recommendations*' (as modified by more recent research). Hi-Line is approved by the Arboricultural Association and we would recommend that you instruct a contractor that carries this approval. Their Register of Contractors is available free from - The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL, Telephone 01242 522152; website www.trees.org.uk

4.2 **Statutory wildlife obligations:** *The Wildlife and Countryside Act 1981* as amended by the *Countryside and Rights of Way Act 2000* provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained by the tree owner or person responsible, before undertaking any works that might constitute an offence.

4.3 **Trees subject to statutory controls:** If the subject tree is covered by a tree protection order (TPO) and/or is located within a Conservation Area, permission for tree pruning or felling must be sought from Wiltshire Council prior to any tree pruning or removal works being undertaken, in the exception of specific works, i.e., removal of deadwood and the removal of imminently dangerous trees.

5 KEY FINDINGS

English Heritage has commissioned Hi-Line to undertake a risk assessment of one mature beech tree (*Fagus sylvatica*) located within the grounds of Ludgershall Castle, as identified by the plan located in Appendix C of this report.

Although no official figures or estimates were provided to Hi-Line with regard to frequency of occupancy within the target area of the subject tree, this assessment has been undertaken with a primary focus on a nearby residential property, Ludgershall Castle access road, and power and telephone lines within target range of the beech tree. This parameter informs the QTRA analysis and associated risk mitigation tree works, where advised.

Please see the Tree Inspection Inventory table (Appendix B) for tree details, the assessment record and associated recommendations.

APPENDIX A – QTRA Methodology

- The Quantified Tree Risk Assessment (QTRA) (© Quantified Tree Risk Assessment Ltd. 2010) method has also been utilised to assist in estimating the risk of harm posed by the trees.

- Quantified Tree Risk Assessment evaluates the 3 primary components of the risk from falling trees:

  1) Target (in tree risk management, the target is that which might be harmed by a falling tree or branch),

  2) Size of tree or branch under consideration, and

  3) Probability of failure of the tree or branch within the coming year.

  The values are applied in ranges as set out in tables 1, 2 and 3 of the QTRA Practice Note (V5.3.1 (UK) July 2018). The calculation uses the upper value for the selected range (e.g. target range 1, which spans a range of values from 1/1 to >1/10, calculates at the highest value of 1/1).

  The 3 components are multiplied, and their product is the annualised risk of harm.

- More information on this can be found by going to the website www.qtra.co.uk

- QTRA advisory thresholds:

Table 1: A description of the QTRA risk threshold taken from the practice note

THRESHOLDS	DESCRIPTION	ACTION
1/1 to 1/1000	Unacceptable Risks will not ordinarily be tolerated	Control the risk
1/1000 to 1/10,000	Unacceptable (Where imposed on others) Risks will not ordinarily be tolerated	Control the risk 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 Review the risk
1/ 10,000 to 1 000 000	Tolerable (Where imposed on others) Risks are tolerable if as low as reasonably practicable (ALARP)	Assess costs and benefits of risk control Control the risk only where a significant benefit might be achieved at reasonable cost Review the risk
1/ 1 000 000 or Less	Broadly acceptable Risk is already as low as reasonably practicable (ALARP)	No action currently required Review the risk

APPENDIX B – TREE INSPECTION INVENTORY

REF/ID:	Reference for Individual tree, group of trees or woodland. (T, G, H or W) followed by item number, for example: T0001/T1. Off-site trees with the potential to affect the site will be prefixed 'O' for example OT0001/OT1. (Some trees may have individual numbered tags)
SPECIES:	Single trees identified by common name and botanical name (in italics). Groups will only have common names or 'Mixed Groups'.
AGE CLASS:	**N** = Newly Planted 1-10yrs in age **Y** = Young 1/5 life expectancy **SM** = Semi-Mature 2/5 life expectancy **EM** = Early Mature 3/5 life expectancy **M** = Mature 4/5 life expectancy **OM** = Over Mature5/5 life expectancy **V** = A tree of great age for its species or with ecological features or cultural values similar to those of an aged tree (conferred by historic management practices).
HEIGHT:	**Small** = <4m, **Medium** = 4 - 12m, **Large** = 13 - 20m, **Very large** = >21m Otherwise, other than where the height of a tree is critical to the outcome of the risk assessment, approximately 1 in 10 trees are measured and the remainder estimated against the measured tree.
DIAMETER:	(Diameter at Breast Height) Stem diameter (in cm) measured at the height of 1.5 metres (UK) or to the nearest measurable point. DBH will only be measured if critical to the outcome of the risk assessment. For example, a stem with a significant defect such as an open cavity.
CROWN RADIUS:	An estimation (in m) of crown spread radius
CONDITION:	A measure of physiological condition **D** = Dead, **P** = Poor (significant defects), **F** = Fair (signs of significant defects), **G** = Good (Good health with no defects).
DESCRIPTION:	Descriptive notes on tree location and targets
SURVEY NOTES :	Descriptive notes on significant tree attributes
TARGET RANGE (TR)	Ranges 1-6. 1 = High, 6 = Low value/occupancy. Highest value target potentially affected by failure of the part most likely to fail.
SIZE RANGE (SR)	Size category of most significant part considered likely to fail. Range 1-4 and PROPERTY (PROP). 1 = Large, 4 = Small. Part identified in 'FAILURE PART' column.
POF:	Probability of failure within 12 months. Range 1-7. 1 = High, 7 = Low.
ROH:	Example: A risk of harm 1 in 20,000 means there is a 1 in 20,000 risk of the tree failing and causing £2,000,000 of damage to people or property. An additional figure in brackets may be suffixed 'T' representing the rate of multiple occupation over the year (e.g. 1(2T)/20,000 = risk of harm 1/10,000 divided between 2 occupants or the equivalent monetary value.
REVIEW YEARS:	Period to next inspection. The re-inspection intervals are either one year plus three months, two years plus three months and so on. The intervals assigned is determined by the age and condition of tree(s) and the target value. The addition of the three months enables the tree inspector to view the trees at different times of the year, for example, in leaf and during dormancy over several inspections.

Ref.	Species	Num. Stems	Height	Stem Dia	Age Class	Review Years	Description	Survey Notes	Condition	Target Range	Size	PoF	RoH	Control Measures	Timescale
T003	Common Beech	1	18	130	Over Mature	1 Year	Targets include residential property to the east, power and phone lines on all sides. Historically reduced and crown raised. Grass at root zone, road to east. Adjacent sycamore felled leaving exposed northern side of beech. Gradual decline recorded over several years: crown dieback, possible beech bark disease and bacterial infection, bark delamination, poor leaf size and density, poor extension growth likely in part attributed to drought stress. Significant pruning wounds throughout show extensive decay ingress and adjoining columns of dysfunctional wood and visible cavities. Limb unions show some included bark, with high leverage on southernmost primary limb due to comparatively dense crown, 50 degree lateral and exposure to wind - considered most likely failure point to inform QTRA. Previous reports of dryad's saddle (*Cerioporus squamosus*) at pruning wounds. Monitor for Meripilus and other basal decay fungal species when in season. Tree removal necessity expected within next 3-5 years due to irreversible decline. Proactive tree removal and replanting would be justified if desired by the client.	South-facing limb union failure onto power and phone lines, wall and pole considered most likely mode of failure.	Fair-poor	Property(2) £200,000 - £20,000	Property	PoF(5) 1/10K - 1/100K	1/300K	Monitor crown health and occurrence of decay fungal fruiting body(s) when in season. Proactive tree removal justified if desired by the client.	6 months

Priority Key

Emergency Safety Works - Undertake within 48hrs of being notified of works	1
High Priority Safety - Undertake As soon as practicable	2
Medium priority Safety - Undertake within 6 months	3
Low Priority Safety – undertake within 12 months	4
Management Recommendations – Short Term (12 – 24 months)	5
Management Recommendations – Long Term (24 – 60 months)	6

Tree Risk Assessment (QTRA)
English Heritage (West)
Luggershall Castle
Fagus sylvatica (Common beech)

Page size: A4

1 : 726

0 25 m 50 m

N







Subject beech tree (above, below and overleaf): Showing crown dieback, bark delamination and cambium decay, pruning wounds and associated targets; residential property, power and telephone lines and the access road to Ludgershall Castle.











HI-LINE

TREE MANAGEMENT, CONSULTANCY & TRAINING

we're all about **trees**

Hi-Line Brookfield Yard
Tedburn Road Exeter EX4 2HF

01392 811338