BROWN BEAR TREE CARE

ARBORICULTURAL SERVICES

TREE SURVEY

The retreat, Nocton Hall, Nocton, LN4 2BA

Adam Scott Dip Arb L4 (ABC), *TechArborA*

TS23003

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I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact me.

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TE7341

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Introduction

1. Qualifications and experience

I have based this report on my site observations and any provided information and I have come to conclusions in the light of my experience. I hold a Level 4 Diploma in Arboriculture and a Level 3 Diploma in Forestry and Arboriculture, as well as being a Technician Member (membership number TE7341) of the Arboricultural Association. To retain this membership, I complete a minimum of 10 hour of continuous professional development (CPD) a year, which consists of attending various courses approved by the Arb Association.

I have been in the arboricultural industry for over 7 years and during this time I have works for 2 large contractors one of which was an Arb Approved contractor based in Lincoln.

I am passionate about trees and continually strive to further knowledge and expertise.

2. Instruction

I am instructed by Mr Richard Robinson (referred to as the ‘client’ from here on) to survey the significant trees located in the areas defined by the client and to provide a report to fulfil the following criteria:

> A schedule of the relevant tree(s) to include basic data, location and condition assessment.
>
> A schedule of any subsequent work that may be required.

3. Scope of this report

This report is only concerned with the prominent trees within the site. It takes no account of any trees outside this remit or any building structural issues. It includes a preliminary assessment based on the site visit and any documents provided.

The survey is based upon information that was available at the time of the inspection. Further inspections are necessary over time to give a fuller picture of the health of trees.

4. Mapping

I have not been provided with a topographical survey of the site. I have plotted the trees by the combined / individual use of land features, manual measurements, laser measurements and GPS. It is estimated that the accuracy is within 1.5-4m, however this depends on the weather conditions at the time of the survey.

Site plans showing all relevant tree locations and any other relevant details can be found in Appendix C.

5. Technical references

This arboricultural report is based on the following primary technical references:

- British Standards Institution (2010) BS 3998 Recommendations for tree work
- Principles of Tree Hazard Assessment and Management. D, Lonsdale
- Hazards from trees. A general guide. D, Lonsdale
- Field Guide for Visual tree Assessment Updated, C, Mattheck
- The body language of trees – A handbook for failure analysis. C, Mattheck & H, Breloer.
- Diagnosis of ill-health in trees. RG Strouts & TG Winer.
- Common sense risk management of trees. Guidance on trees and public safety on the UK for owners, managers and advisers. NTSG
- The CODIT Principle: Implications for best practices. D, Dujesiefken & W, Liese
- Managing Trees for Safety. NTSG
- Tree pests and Diseases, An Arborists Field Guide. Arboricultural Association
- Fungi on Trees, An Arborists Field Guide. Arboricultural Association
- Assessment of Tree Forks. Dr D, Slater

Limitations

6. Survey

The survey was carried out from ground level only and relates only to arboricultural aspects. All visual observations and recommendations, relate, to the condition of the trees on the day of the survey. The trees have been assessed with the aid of a Nylon mallet for the purpose of detecting changes in resonance which may indicate that further investigation is required.

7. Time limit

Due to the changing nature of trees and other site circumstances, this report and any recommendations made are limited to an 18-month period, this is to allow the tree to be observed both whilst in leaf and dormant. Any alteration to the site and any development proposals could change the current circumstances and may invalidate this report and any recommendations made.

8. Tree health

Trees are dynamic structures that can never be guaranteed 100% safe: even in good condition they can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.

9. Justification of works

Where management action / tree surgery is recommended, this is based on maximising the tree’s safe useful life expectancy (SULE), given its current situation or the safety of persons and surrounding targets. A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree would be made safe following the completion of any recommended work.

Site visit and observations

10. Site visit

The tree survey was conducted by Adam Scott Dip Arb L4 (ABC), TechArborA on 1st March 2023 and the weather was overcast with light precipitation, good visibility, light wind and cold temperatures.

11. Identification and location of trees

The trees location has been plotted in Portable Mapper using maps provided by Mapserve and can be found in Appendix C.

12. Systematic method of assessment

All tree inspections were carried out in accordance with current best practise (Visual Tree Assessment) to give a systematic, consistent and transparent evaluation method to tree inspecting.

All tree inspections were conducted from ground level with the use of an acoustic sounding hammer and probe. No invasive decay detective instruments were used.

Condition assessment

13. Tree data

All data regarding the trees inspected for this report can be found in Appendix A Tree Data.

14. Tree work recommendations

Within Appendix B the Tree Management Work Recommendations are prioritised for expressing the urgency of the works, which is as follows;

Priority	Colour	Time Scale
Urgent	RED	ASAP (ideally less than 7 days)
High	YELLOW	Within 6 Months
Moderate	ORANGE	Within 12 Months
Low	GREY	Within 18 Months
N/A	GREY	N/A

Please note that all work must be carried out to the *British Standard 3998:2010 Tree Works Recommendation*

15. Tree location

A Tree Location Plan can be found in Appendix C. Trees and Tree Groups that require priority hazard work will be circled in colour. The colour coding is as above in section 14.

Other considerations

16. Tree Preservation Order (TPO) and Conservation Area (CA)

A tree preservation order, referred to as a 'TPO', is an order made by a local planning authority ('LPA') in respect of trees or woodlands.

The principal effect of a TPO is to prohibit the: Cutting down, uprooting, topping, lopping, wilful damage, or wilful destruction of trees without the LPAs consent. The cutting of roots is potentially damaging and so, in the Secretary of State's view, requires the LPAs consent.

Anyone who, in contravention of a TPO, wilfully damages a tree in a way that is likely to destroy it is guilty of an offence. Anyone found guilty of this offence is liable, if convicted in the Magistrates Court, to a fine of up to £20,000. In serious cases a person may be committed for trial in the Crown Court and, if convicted, is liable to an unlimited fine.

Conservation Areas are areas of special architectural or historical interest with a character or appearance that is desirable to preserve or enhance. Trees may often contribute to the special character of the area.

All trees in a Conservation Area are subject to controls which enable the LPA to protect the special character of the area created by the trees. If trees have a specific Tree Preservation Order (TPO) on them, then the normal Tree Preservation Order controls apply.

You must give the LPA 6 weeks' notice, in writing, of your intention to do any work to trees in a Conservation Area. You must not carry out any work during the six-week period, which starts from the date of receipt of your notification by the council, unless you receive written permission to do so.

Work which is not exempt and is carried out without formal notification or within the six-week period without the written consent of the council is illegal. The LPA may prosecute offenders and fines of up to £20,000 for each tree may be imposed by the Magistrates Court in the event of offenders being convicted of an offence. If proceedings are instituted in the Crown Court fines are unlimited. There is a duty to replace any tree removed without permission.

17. Tree works

The management options noted in the survey data should be followed so to keep a maintained tree stock on and around this development site, particularly giving clearance from properties and over any adopted roads or footpaths.

18. Implementation of works

All tree works should be carried out to BS3998 Recommendations for Tree Work as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association.

19. Local Arboricultural contractors

If requested I can provide a list of reputable arboricultural contractors that have carried out work on previous projects.

20. Safety

Tree works can be a hazardous profession, so it is important that all operatives have the necessary and relevant training, health and safety policy and valid forms of insurance.

21. Statutory Wildlife obligations

The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000, provide 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 before undertaking any works that might constitute an offence.

22. Future considerations

Any remaining trees should be inspected on a regular basis by a qualified arboricultural consultant and should not exceed a 5-year interval.

Glossary of Arboricultural Terms

Banana Cracks
These usually form on the underside of leaning trees and are vertical. These can lead to colonisation by decay fungi.

Bleeding

Flow of sap from wounds and/or other injuries.

Bole

The central stem of the tree.

Bough

The gradual curve of a branch or stem

Bracket

Fruiting or spore producing body of wood decay fungi, forming on the external surface of the stem or
trunk.

Branch

A secondary shoot or stem arising from the main stem of trunk.

Branch Bark Ridge

A ridge of bark in a branch crotch that marks where branch and trunk tissue meet and often extends down the trunk.

Branch Collar

Wood that forms around a branch attachment, frequently more pronounced below the branch. The branch collar is used to identify the correct location of all thinning cuts.

Brown Rot
Form of decay where cellulose is digested. The result of brown rot is brittle wood with no tensile strength.

Buttress
Support branch, stem, or root; usually associated with exaggerated growth.

Cavity
An open wound, characterised by the presence of decay and resulting in a hollow structure.

Callus
Undifferentiated tissue initially formed by the cambium around and over a wound.

CODIT
Compartmentalisation Of Decay In Trees is the term used to described how trees deal with decay.

Co-dominant
A situation where a tree has two or more stems which are of equal diameter and relative amounts of leaf area. Trees with co-dominant primary scaffolding stems are inherently weaker than stems, which are of unequal diameter and size.

Compression Union
This is where the wood fibres at a branch or stem union have not knitted together. This can result in union failure due to the continued radial growth of the tree pushing the union apart.

Compression Wood
Type of reaction wood that develops on the underside of branches and leaning trunks in coniferous trees; tends to maintain branch angle of growth or straighten the trunk.

Coppicing

The cutting down of a tree within 300mm (12in) from the ground at regular intervals, traditionally applied to certain species such as Hazel and Sweet Chestnut to provide stakes etc.

Crown
The area of a tree that bares foliage.

Crown Lifting

The raising of clearance between the ground and the first branch on the tree.

Crown spread
The distance the crown extends from the main stem at cardinal points e.i. N, E, S, W.

Deadwood
Woody tissue that is no longer functional, usually branches and graded by size; Minor – diameter less than 50mm and Major – diameter greater than 50mm.

Decay

The process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.

Decline

When a tree exhibits signs of a lack of vitality such as reduced leaf size, colour or density.

Defect

A fault or weakness in a tree support system.

Elephant Ears/Ears

This is the term given to the type of reaction wood that occurs either side of a compression union. These help to strengthen compression unions by knitting together wood fibres either side of the union.

Epicormic Growth

Shoot that arises from latent or adventitious buds that occur on stems and branches and on suckers produced from the base of trees.

Fibre Buckling

Visible enlargement of tissue on the down side of a tree stem. Represents the reaction of a stem to a heavy loading. It is normally safe except when coupled with bark defoliation from the top (tensile) part of the loaded stem.

Fungi

Simple plants that lack a photosynthetic pigment. The individual cells have a nucleus surrounded by a membrane, and they may be linked together in long filaments called hyphae. The fruit of which (mushrooms) are often referred to as ‘Fruiting Body’.

Gall

A localised swelling of branch or stem generally caused by fungi, bacteria, insects or a physiological disorder.

Hazard Beam

This is where the end weight of a branch is too much and partially failed, causing a horizontal split to form through the middle of a branch.

Included Bark

Included bark occurs when bark is included into the attachment between two stems, preventing the joining of wood tissue in the area between the stems. Included bark attachments always have an extremely narrow angle between the stems, resembling the letter “V” (rather than the letter “U” or “L” typical in strong attachments). As stems having included bark increase in size, pressure is exerted from the stem expansion and a crack often develops in the crotch between the stems. Included bark attachments have a higher potential for failure in later years.

Lateral

A branch or twig growing from a parent branch or stem in a horizontal direction from the parent stem.

Leader
A dominant upright stem, usually the main trunk.

Lean
Departure from vertical of the stem, beginning at or near the base of the trunk.

Limb
Same as branch, but usually larger and more prominent.

Physiological Condition
An overall assessment of a tree's health graded Good – no significant health issues, Fair – minor symptoms of ill health and Poor – significant ill health.

Pollard
Pruning technique by which young trees or branches are initially headed and then re-headed on an annual basis without disturbing the callus knob.

Reduction
Pruning to decrease height or spread on entire tree or one section; also referred to as reduction or reduced pruning.

Reaction Wood
Specialised secondary xylem that develops in response to lean or similar mechanical stress, to restore the stem to the vertical. Occurs as compression wood in conifers and tension wood in angiosperms.

Retrenchment
This is where the tree turns the upper most crown in to deadwood which often looks like a stag's antlers. This can happen for a number of reasons.

Retrenchment pruning
A form of reduction intended to encourage development of lower shoots and emulate the natural process of tree ageing.

Root
An organ of a tree that serves to maintain mechanical support, to provide water and essential elements from the soil through absorption, and to store energy reserves.

Root Collar
The junction between the root of a plant and its stem, often indicated by the trunk

flare.

Sapwood
The outer portion of the wood that has living cells and transports water and nutrients and stores carbohydrates.

Scaffold
A large limb that is or will be part of the permanent branch structure of a tree.

Simultaneous Rot

This is where both Brown and White rot occurs at the same time, eventually this results in ceramic failure of the tree.

Species
A group of plants that resemble each other closely and that interbreed freely. Displayed as common name first and taxonomic name in brackets.

Stem
A woody structure bearing foliage and buds that gives rise to other stems.

Stem Diameter
A measurement of the diameter of the mains stem at 1.3 meters from the ground.

Structural Condition
An overall assessment of a trees structural condition graded; Good – minimal defect, Fair – defects of low significance and Poor – major defects or dead.

Suckers
Adventitious stems arising from the lower trunk or roots.

Tension Wood
Type of reaction wood in angiosperms that forms on the upper side of branch and stems, acting to pull the member back to a vertical orientation or a genetically programmed angle of growth.

Tension Union
This is where the wood fibres at the union have knitted well and form a strong U-shaped union.

Torsional Twist

Often caused by prevailing winds effect on a growing tree over time. The main stem appears twisted, this can sometimes be a species characteristic.

Union
The junction between stem and branch or between stems.

White Rot
A form of decay where the lignin in the cells is broken down leaving white spongy wood tissue with no compressive strength.

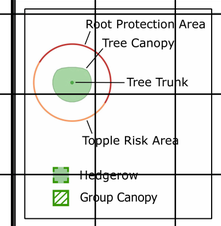
Wound
An opening that is created when the tree's protective bark covering is penetrated, cut, or removed, injuring or destroying tissue. Pruning a live branch creates a wound, even when the cut is properly made.

Wound-wood
Differentiated woody tissue that forms after initial callus has formed around margins of a wound. Wounds are closed primarily by wound-wood.

BS3998 Tree Survey Data

Tree No. (TPO No)	Species (Taxonomic)	Height (m)	Stem Diameter (mm)	Age Class	Physiological Condition	Structural Condition	Observations	Recommendations	Priority
T1 (T143)	Sycamore (Acer pseudoplatanus)	18.0	795	Mature	Good	Fair	Codominant stems from base with included bark union, minor elephant ears formed east and no ears west. Moderate ivy colonisation on northern leader. Unable to assess scaffold unions on the northern stem due to ivy. Rubbing branch between stem with no apparent grafting for natural bracing. Major and minor deadwood present throughout crown.	Crown reduction of southern leader by 3-4 meters in. Height and 2.5 meters in spread to reduce the sail area of the southern leader and any stress experienced at the included junction. A maximum cut diameter of 75mm will reduce the amount of dynamic mass that can be removed.	Moderate
T2 (T146)	Holly (Ilex aquifolium)	11.8	595	Mature	Good	Fair	3 Codominant stems from 1.6m with included bark unions an minor ear formation. Ivy colonisation (banded). Central stem dominant towards the property.	Reduction in height of the central leader by 2.5m to a suitable growth point.	Low
T3	Common Yew (Taxus baccata)	6.0	175	Semi Mature	Good	Good	Codominant stems from 0.5m. Included bark union with potential for natural bracing.	No work	N/A
T4 (T148)	Sycamore (Acer pseudoplatanus)	16.5	820	Mature	Good	Fair	Numerous historic pruning wounds with good wound wood formation. Fluting of the main stem with good buttress. Large occluding wound south 2m. Crown bias and lean NW. cup shaped union at 3.5m	Radial reduction of the north western crown from 14.5m to 11.5m (3m) with a maximum cut diameter not to exceed 50mm.	Moderate
T5 (T151)	Common Ash (Fraxinus excelsior)	16.6	540	Mature	Fair	Fair	Historical removal of second Codominant stem at base with clear decay of the secondary hardening. *Inonotus hispidus* bracket protruding from the ivy on the main stem NW at 4m. Major deadwood throughout crown.	Given the presence of Inonotus hispidus on the main stem at 4m and the nature of the fungi as well as the trees location, complete removal of the tree is advised	Moderate
T6	Common Ash (Fraxinus excelsior)	10.0	360	Semi Mature	Good	Poor	Large cavity at base north with significant decay of both sapwood and heartwood. Heavy stem lean north over the driveway.	Given the significant lean to the north and the cavity at the base on the south where the tension root should be, complete removal of the tree is advised.	Moderate
T7 (T152)	Sycamore (Acer pseudoplatanus)	16.0	580	Mature	Good	Fair	Grown from underneath T6 and unable to assess buttress or root plate. Significant dead ivy unable to assess main stem and scaffold union. Minor and major deadwood in upper crown.	Remove ivy to allow for future inspections	Low
T8	Sycamore (Acer pseudoplatanus)	14.5	520	Mature	Good	Good	Numerous small branch tear outs eastern lower crown. Historical pruning wounds with good wound wood. Major deadwood eastern crown.	Remove deadwood	Low

Tree No. (TPO No)	Species (Taxonomic)	Height (m)	Stem Diameter (mm)	Age Class	Physiological Condition	Structural Condition	Observations	Recommendations	Priority
T9	Spruce (Picea ssp)	11.3	285	Semi Mature	Good	Good	Minor historical pruning wounds with good wound wood. Large surface root west minor indication of damage.	No work	N/A
T10	Scots pine (Pinus sylvestris)	10.4	275	Semi Mature	Good	Good	Crown density is a little sparse for species. Some minor historic pruning wounds with good wound wood formation.	No work	N/A
TG11	Sycamore (Acer pseudoplatanus)	11.5	365	Early Mature	Good	Good	Tree group consisting of 4 trees of similar age and height. Minor deadwood. Squirrel damage in the upper crown of all four trees.	No work	N/A
TG12	Sycamore (Acer pseudoplatanus)	11.5	230	Semi Mature	Good	Good	Tree group consisting of 5 trees of similar age and height. Minor deadwood in the shared canopy. Indications of previous Ivy colonisation.	No work	N/A
TG13	Sycamore (Acer pseudoplatanus)	14.4	395	Mature	Good	Good	A tree group consisting of 3 trees of similar age and height. Codominant stems with included union at base, trees are afforded shelter from neighbouring tree groups. Minor cavity with good wound wood forming. Large historical pruning wounds with good wound wood. Major deadwood	Remove deadwood	Low
TG14	Sycamore (Acer pseudoplatanus)	14.0	640	Mature	Good	Fair	A tree group consisting of 3 trees of similar age and height. Large included union at 2m. Major deadwood in upper crown	Remove deadwood	Low



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Brown Bear Tree Care

Drawing Title:	Appendix C - Site Plan	
Site Address:	The Retreat, Nocton Hall, Nocton, LN4 2EA	
Drawing Number:	001	Scale 1:270 at A2
Drawn by Adam Scott		Date 03/03/2023