



ARBORICULTURAL REPORT & Impact Assessment to **BS5837:2012 at:**

***Stable Cottage,
Norton Disney,
Lincoln
LN6 9JP.***

Prepared for:
Influence Environmental Limited

Date: *June 2021*

Reference: *AWA3797*



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1. Introduction

1.1 Instructions and Brief

- 1.1.1 We have been instructed by Influence Environmental Limited to visit the site and prepare our findings in a report.
- 1.1.2 The report is required in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*, to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.2 Survey Details

- 1.2.1 The survey took place during May 2021.
- 1.2.2 The trees were surveyed visually from the ground using “Visual Tree Assessment” techniques and in accordance with the guiding principles of British Standard 5837:2012.
- 1.2.3 Any additional off-site trees that could impact a new development design have been included in the tree survey parameters.
- 1.2.4 The tree positions were plotted using enhanced GPS technology (1m accuracy) and laser distance measurer.
- 1.2.5 This report has been prepared by Mr Adam Winson, Chartered Arboriculturist, MSc, BSc (Hons), MICFor, MArborA, Principle and Director of AWA Tree Consultants Ltd.
- 1.2.6 The tree survey data collection was carried out by Mr Adam Winson, Chartered Arboriculturist, MSc, BSc (Hons), MICFor, MArborA, Principle and Director of AWA Tree Consultants Ltd.
- 1.2.7 Full qualifications and experience are included within **Appendix 1**. Explanatory details regarding the survey methodology are included within **Appendix 2**. A full explanation of the tree data can be found at **Appendix 3**. Full details of all the trees surveyed are found in **Appendix 4**. For tree locations refer to the Tree Constraints Plan at **Appendix 5** and for detail of the impacts of the new development refer to the Tree Impacts Plan at **Appendix 6**.

2. The Site

2.1 Location and Description

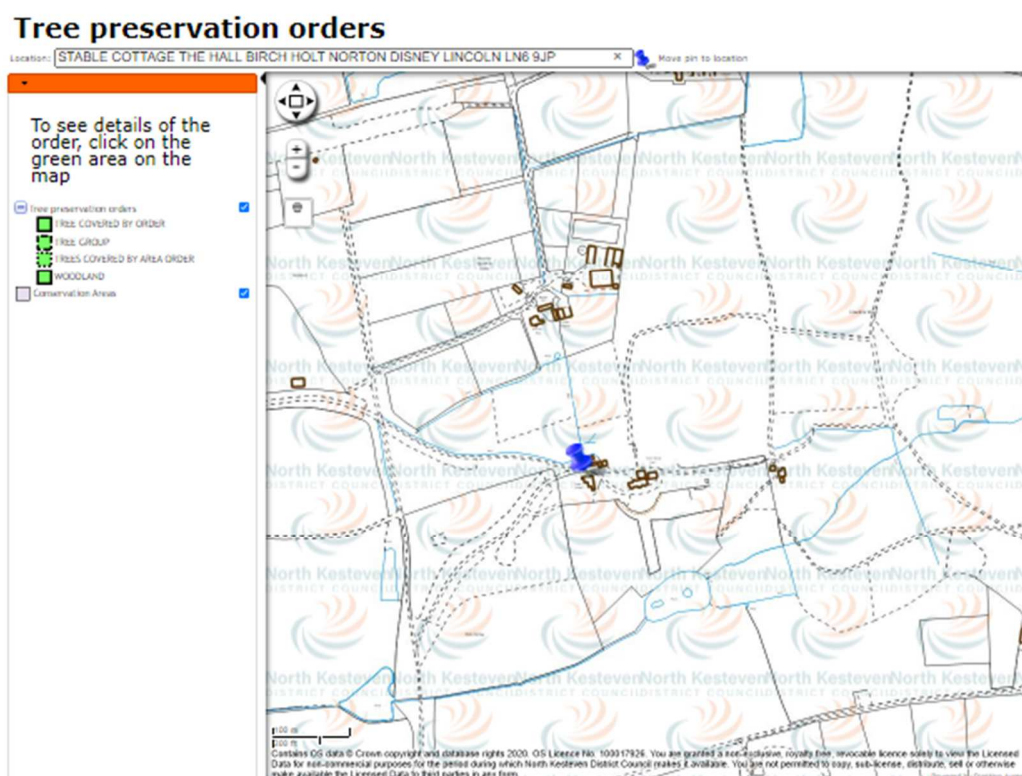
- 2.1.1 The site is located in Norton Disney, a small village and civil parish on the western boundary of the North Kesteven district of Lincolnshire.
- 2.1.2 The site survey area comprises land to the east of a bungalow, which is adjacent to and within the wider grounds of Norton Disney Hall, the manor house in the parish.
- 2.1.3 The approximate area of the survey is highlighted in the image below (Google Earth, 2021):



3. The Trees

3.1 Legal

3.1.1 An online search has been carried out with North Kesteven District Council on 03/06/21 to ascertain whether any trees at the site are located within a Conservation area or are protected by a Tree Preservation Order (TPO). As of this date no trees within the site are legally protected. The accessed image is detailed below:



3.1.2 Due to the large potential penalties for illegally carrying out work to protected trees, before authorising any tree works a further check should be made with the Local Planning Authority to confirm if any trees are covered by a Tree Preservation Order or are within a Conservation Area. If either applies, then statutory permission is required before any works can take place (unless such work is approved as part of full planning permission).

3.1.3 When appointing a tree surgeon, only properly qualified and experienced companies should be used, who have adequate Public Liability and Employer's Liability Insurance.

3.1.4 All tree work should be carried out according to British Standard 3998:2010 Tree Work - Recommendations.

3.2 Tree Survey Results

- 3.2.1 The tree survey revealed 6 items of woody vegetation, comprised of 4 individual trees and 2 groups of trees.
- 3.2.2 Of the surveyed trees: 1 tree is high value retention category 'A', and the remaining 5 trees and groups are lower value retention category 'C' (explanatory details regarding the retention categories are included at Appendix 3).
- 3.2.3 The tree cover is situated to the east of the bungalow along or beyond a wooden boundary fence. The trees all form part of the wider grounds of the Hall. The wider Hall grounds has many old and high value trees, yet these could not impact the new development design and so have not been included in the tree survey parameters.
- 3.2.4 The most significant tree is a large and impressive Wellingtonia or Giant Sequoia, situated beyond the site boundary to the southeast of the bungalow. This mature tree has high landscape and arboricultural value. It is one of three similar aged trees to the front of the Hall.
- 3.2.5 The other trees are generally comprised of Thuja Cypress species that form an unmanaged hedge type feature along the eastern boundary of the bungalow property. Other than some screening value, these trees are not noteworthy and should not form a significant constraint to any new development.
- 3.2.6 The survey included a single Ash tree. Many Ash trees in the wider region are being impacted by Chalara or Ash dieback disease. Once a tree is infected, the disease is usually fatal, either directly or indirectly. While the identified Ash trees may continue to provide landscape and wildlife benefits for some time, their long-term prospects are likely to be limited as a result of Ash dieback.
- 3.2.7 The tree Root Protection Area (RPA) detailed on the Tree Constraints Plan at Appendix 5 has been used as a layout design tool, to inform on the area around a tree where the protection of the roots and soil structure is treated as a priority.
- 3.2.8 The RPA for each tree has been plotted as a polygon centred on the base of the stem. Due to the presence of a root barrier along the eastern boundary of the site, and due to previous ground works along the east of the bungalow, the RPA is likely to be a simplified and exaggerated representation of the tree roots actual morphology and disposition. However, detailed modifications have been avoided.

3.3 Photographs



Photo 1 (provided by client): Historic ground works undertaken to the east of the bungalow (provided by client).



Photo 2 (provided by client): Historic ground works undertaken to the south east of the bungalow



Photo 3 (provided by client): Hand excavations undertaken 05/2021 to show position of root barrier



Photo 4 (provided by client): Hand excavations undertaken 05/2021 to show root barrier



Photo 5: G1 to T6 (right to left), looking east

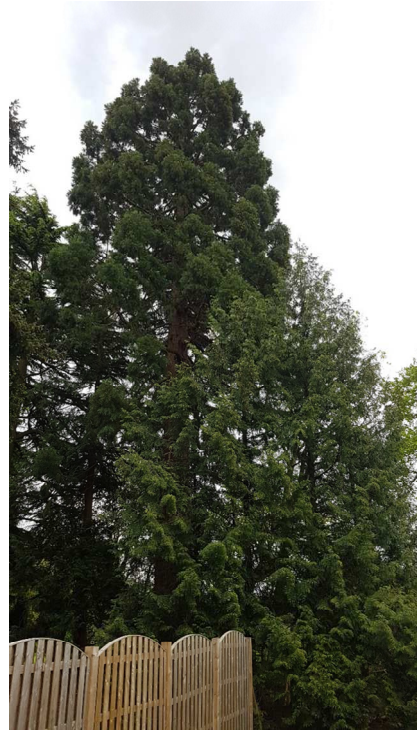


Photo 6: G1 and T2, looking south



Photo 7: G1 and bungalow, looking south



Photo 8: G5 and T6, looking north

4. Arboricultural Impact Assessment

4.1 Proposed New Development

- 4.1.1 It is proposed to build a new side extension to the existing bungalow.
- 4.1.2 The development proposals have been provided by my client and inform this arboricultural impact assessment and the Tree Impacts Plan at Appendix 6.

4.2 Direct Impacts

- 4.2.1 From assessing the new development proposals, no trees will require removal to facilitate the new development. All the surveyed trees can be retained throughout the development.
- 4.2.2 The trees for retention have been identified in green on the attached Tree Impacts Plan at Appendix 6.
- 4.2.3 The trees selected for retention will provide an important element of green infrastructure, provide visual screening and complement the new development.

4.3 Indirect Impacts

- 4.3.1 The tree Root Protection Area (RPA) detailed on the Tree Plans at Appendix 5 and 6, has been used as a layout design tool, to inform on the area around a tree where the protection of the roots and soil structure is treated as a priority. As such, no significant negative indirect impacts have been identified.
- 4.3.2 The new extension is outside of the detailed RPAs, as shown on attached Tree Impacts Plan at Appendix 6.
- 4.3.3 In addition, due to previous ground works and an existing root barrier, to the east of the bungalow, the detailed RPA for these trees is likely to be an exaggerated representation of the trees actual rooting area. As such, it is unlikely that significant roots will be within the development area and the retained trees should remain largely unaffected by the works, provided care is taken during construction.

- 4.3.4 The design of the new development has considered the trees crown position in relation to the development. Some shade from trees may be beneficial. In particular, deciduous trees give shade in summer but allow access to sunlight in winter. However, the design proposals avoid excessive shading, and give adequate provision for future tree growth.
- 4.3.5 The buildability of the proposed development has been assessed in terms of access, adequate working space and provision for the storage of materials, including topsoil, in relation to the trees. It is anticipated the construction access and associated storage of materials will be from existing access routes from the southwest of the bungalow.

4.4 Protection of the Retained Trees

- 4.4.1 The existing boundary fencing along the eastern boundary of the site should be retained throughout the development. This fencing will protect the RPAs of the retained trees as detailed on the attached Tree Impacts Plan at Appendix 6.
- 4.4.2 The existing fencing is appropriate to the degree and proximity of likely construction works.
- 4.4.3 The area enclosed by the fencing is referred to as the Construction Exclusion Zone (CEZ); this area should be considered a restricted area. No pedestrians, vehicles, storage of materials, equipment or machinery should be allowed within the CEZ. The site manager must ensure that all personnel are aware of the restrictions that apply to the fenced-off area.

5. Signature

I trust this report provides all the required information.

Signed



.....

Adam Winson, Chartered Arboriculturist, MSc, BSc (Hons), MICFor, ACIEEM.

4th June 2021

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Chartered Foresters
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Appendices

Appendix 1: Authors Qualifications and Experience

Appendix 2: Survey Methodology and Limitations

Appendix 3: Explanation of Tree Descriptions

Appendix 4: Tree Data

Appendix 5: Tree Constraints Plan

Appendix 6: Tree Impacts Plan

Appendix 1: Authors Qualifications & Experience

Mr Adam Winson Chartered Arboriculturist, MSc, BSc (Hons), MICFor, MArborA, ACIEEM, QTRA Registered

Adam is the company Director and Principle Consultant. He has a mix of the highest-level academic qualifications and relevant work experience. He has worked within the tree care profession for over 20 years and was awarded an MSc in Arboriculture and Urban Forestry, with distinction. Adam is a Chartered Arboriculturist and a Registered Consultant with the Institute of Chartered Foresters, a Professional Member of the Arboricultural Association and has original research published by the UK Forestry Commission. His work ranges from individual expert tree inspections to managing trees on major multimillion pound housing developments and infrastructure projects. His work often involves trees with preservation orders or litigation, and he has appeared as a tree expert, at planning appeal hearings up to the Crown Court.

Mr James Brown BSc (Hons) Arboriculture, MArborA, PTI (Lantra)

James has a BSc (Hons) in Arboriculture, attaining first class honours, as well as being awarded the Institute of Chartered Forester's Student award. He is a Professional Member of the Arboricultural Association and an Associate of the Institute of Chartered Foresters. James joined AWA in 2016, after previously working in Europe's largest tree nursery and has experience of Local Authority tree officer work. His main work consists of tree surveys for development projects and preparing Tree Protection Schemes to BS 5837:2012.

Dr Felicity Stout Ph.D, MA, BA (Hons), Cert Ed (Forestry), TechArborA, PTI (Lantra)

Felicity has worked in the tree care profession for the last 10 years. She has a Certificate in Higher Education in Forestry, with a focus on Urban Forestry. She has practical arboricultural contractor experience and is a qualified and experienced Social Forestry practitioner. Felicity has a PhD in History, with a particular interest in the history of woodland and tree management and has published in The Arboricultural Journal on this subject.

Mr Tom Readman Cert Arb L3, Level 4 Forestry and Arboriculture, Valid Tree Risk-Benefit Validator

Tom joined AWA from his previous role as a tree risk surveyor with Harrogate Borough Council, where he undertook tree risk surveys at a range of sites and prescribed suitable works. Tom also has extensive previous experience as a climbing arborist. Tom achieved at Distinction Star, and was recognised as the student of the year, in the Extended Diploma in Forestry and Arboriculture and is now completing a Foundation Degree in Arboriculture, while working at AWA. Tom's work focuses on tree risk surveys and accurate tree data collection for development projects to BS 5837:2012.

Mr James Godfrey BA (Hons), Cert Arb L3, Level 4 Forestry and Arboriculture, TechArborA

James has extensive arboricultural experience working as a team leader in both the public and private sector. Achieving a Distinction Star in the Extended Diploma in Forestry and Arboriculture allowed James to utilise this knowledge in order to inform the maintenance and wellbeing of trees across the UK over the course of his career. During his time at Darlington Borough Council, James was responsible for on-site assessment and advising of remedial works for council owned trees. Currently, James is completing a Foundation Degree in Arboriculture and Tree Management, while working at AWA.

Mr David Miller BA (Hons), PGCE education, Dip Arboriculture Level 4

David joined AWA after having managed his own tree care team for 8 years and gained a wealth of experience in the tree care industry. Prior to this David spent 10 years working in secondary mainstream and special education. David has also travelled worldwide, mainly trekking and running. His main work at AWA consists of tree surveys for development projects and preparing Tree Protection Schemes to BS 5837:2012.

Appendix 2: Survey Methodology and Limitations of Report

The survey was undertaken in accordance with British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. The trees were assessed objectively and without reference to any proposed site layout. The trees were surveyed from the ground using 'Visual Tree Assessment' (VTA) methodology. VTA is appropriate and is endorsed by industry guidance. It is used by arboriculturists to evaluate the structural integrity of a tree, relying on observation of trees biomechanical and physiological features. Measurements are obtained using a diameter tape, clinometer, laser distometer and loggers tape. Where this is not practical measurements are estimated. Tree groups have been identified in instances as defined in BS 5837:2012. Shrubs and insignificant trees may have been omitted from the survey.

This report represents a BS5837 tree survey and should not be accepted as a detailed tree safety inspection report; however, tree related hazards are recorded and commented upon where observed, yet no guarantee can be given as to the absolute safety or otherwise of any individual tree. All recommended tree work must be to BS 3998:2010 - '*Tree Work: Recommendations*'.

The findings and recommendations contained within this report are valid for a period of twelve months from the date of survey. The author shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with these guidelines and terms.

Appendix 3: Explanation of Tree Descriptions

HEIGHT of the tree is measured from the stem base in metres. Where the ground has a significant slope the higher ground is selected.

CROWN HEIGHT is an indication of the average height at which the crown begins and includes information of the first significant branch and direction of growth.

STEM DIAMETER is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; the diameter is measured close to ground level or else a combined stem diameter is calculated.

CROWN SPREAD is measured from the centre of the stem base to the tips of the branches in all four cardinal points.

AGE CLASS of the tree is described as young, semi-mature, early-mature, mature, or over-mature.

PHYSIOLOGICAL CONDITION is classed as good, fair, poor, or dead. This is an indication of the health of the tree and takes into account vigour, presence of disease and dieback.

STRUCTURAL CONDITION is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

LIFE EXPECTANCY is classed as; less than 10 years, 10-20 years, 20-40 years, or more than 40 years. This is an indication of the number of years before removal of the tree is likely to be required.

Retention Categories

A (marked in green on Appendix 5) = retention most desirable. These trees are of very high quality and value with a good life expectancy.

B (marked in blue on Appendix 5) = retention desirable. These trees are of good quality and value with a significant life expectancy.

C (marked in grey on Appendix 5) = trees which could be retained. These trees are of low or average quality and value, and are in adequate condition to remain until new planting could be established.

U (marked in red on Appendix 5) = trees for removal. These trees are in such a condition that any existing value would be lost within 10 years.

Tree ID	Tree Species		Measurements				Crown (m)					Tree Condition						Value		Management		
	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Dia (mm)	Estimated	Ave Height	N	E	S	W	Roots	Stem	Crown	Comments	Physiological	Structural	Life Expectancy	Amenity	Category	Works
G1	Western Red Cedar	<i>Thuja plicata</i>	Semi-mature	12	1	200	No	1	3	4	2	4	No visual defects. Soil compaction	Single stemmed. Slight lean. Vertical	Normal. Small / sparse	Group of closely spaced stems forming one crown.	Fair	Fair	20 to 40 yrs	Low	C	No works required
T2	Wellingtonia	<i>Sequoiadendron giganteum</i>	Mature	27	1	1550	No	8	5	5	6	5	No visual defects. Soil compaction	Single stemmed. Vertical	Normal. Minor deadwood	Large old tree	Good	Good	>40 yrs	High	A	No works required
T3	Ash	<i>Fraxinus excelsior</i>	Early-mature	13	1	450	No	4	1	3	6	3	No visual defects	Single stemmed. Slight lean	Small / sparse. 25% dead / absent	Suppressed. Limited prospects	Fair	Fair	10 to 20 yrs	Low	C	No works required
T4	Fir	<i>Pseudotsuga menziesii</i>	Early-mature	16	1	600	No	5	5	4	4	4.5	No visual defects. Soil compaction. Soil erosion	Single stemmed. Vertical. Bark damage	Small / sparse. Minor dieback. Minor deadwood	Die back in upper crown	Fair	Fair	10 to 20 yrs	Moderate	C	No works required
G5	Western Red Cedar	<i>Thuja plicata</i>	Early-mature	14	6	250	No	1	4	3	4	3	No visual defects	Multiple stemmed. Vertical	Normal	Multiple stemmed from older stump	Fair	Fair	20 to 40 yrs	Moderate	C	No works required
T6	Western Red Cedar	<i>Thuja plicata</i>	Early-mature	18	1	550	Yes	2	3	3	2	2	No visual defects	Single stemmed. Vertical	Small / sparse. Moderate dieback	Crown die-back suggests limited prospects	Fair	Fair	10 to 20 yrs	Moderate	C	No works required



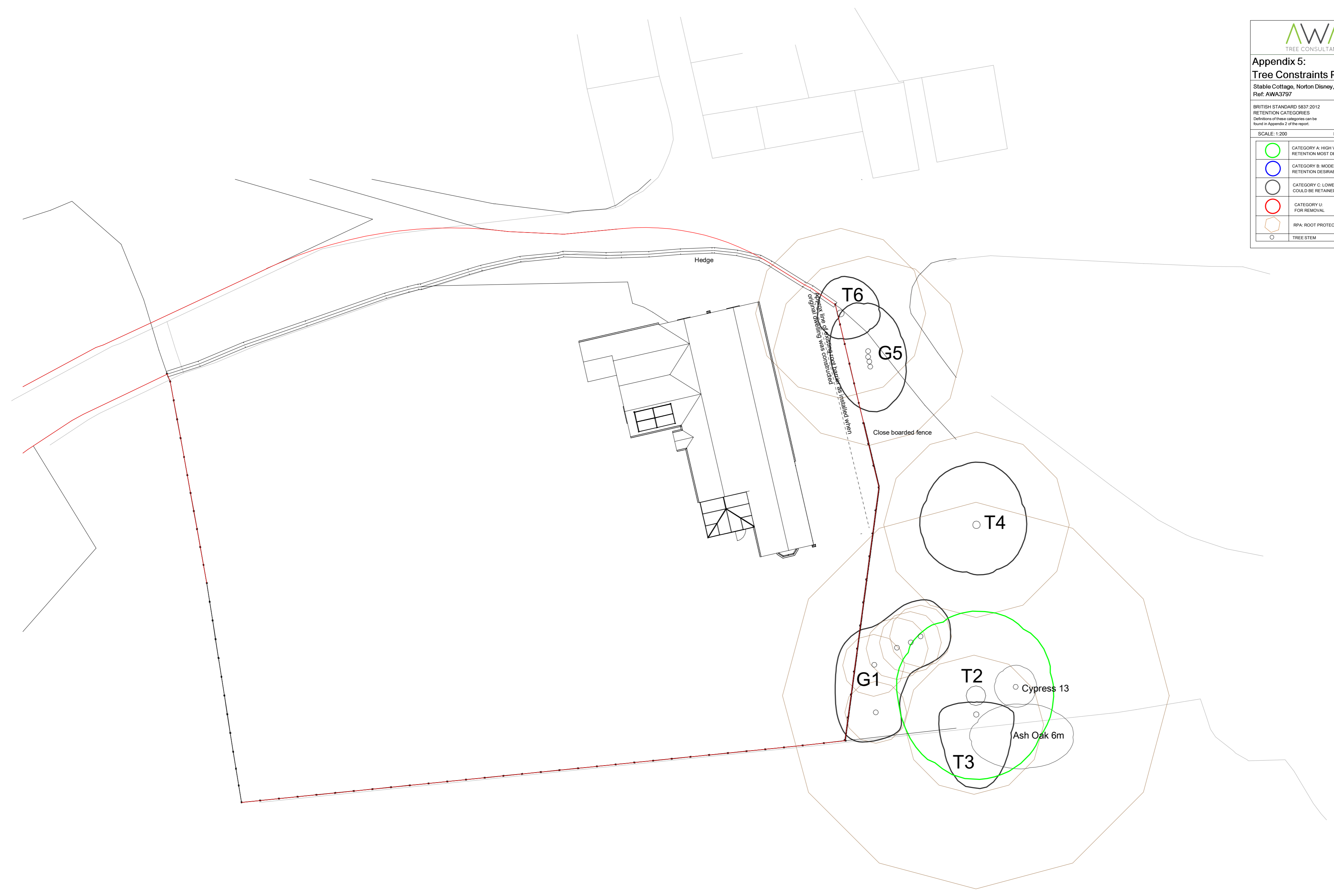
Appendix 5: Tree Constraints Plan

Stable Cottage, Norton Disney,
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BRITISH STANDARD 5837:2012
RETENTION CATEGORIES
Definitions of these categories can be
found in Appendix 2 of the report.

SCALE: 1:200 PAPER: A2

	CATEGORY A: HIGH VALUE RETENTION MOST DESIRABLE
	CATEGORY B: MODERATE VALUE RETENTION DESIRABLE
	CATEGORY C: LOWER VALUE COULD BE RETAINED
	CATEGORY U: FOR REMOVAL
	RPA: ROOT PROTECTION AREA
	TREE STEM





**Appendix 6:
Tree Impacts Plan**

Stable Cottage, Norton Disney,
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BRITISH STANDARD 5837:2012
SCALE: 1:200 PAPER: A2

	TREE/HEDGE TO BE RETAINED
	TREE/HEDGE TO BE REMOVED
	RPA: ROOT PROTECTION AREA
	TREE STEM

