



ARBORICULTURAL REPORT

& Impact Assessment

to **BS5837:2012** at:

***Walled Garden Area,
Cannon Hall,
Cawthorne,
Barnsley
S75 4AT.***

Prepared for:
plincke.

Date: *February 2021*

Reference: AWA3590



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1. Introduction

1.1 Instructions and Brief

- 1.1.1 We have been instructed by plincke 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.

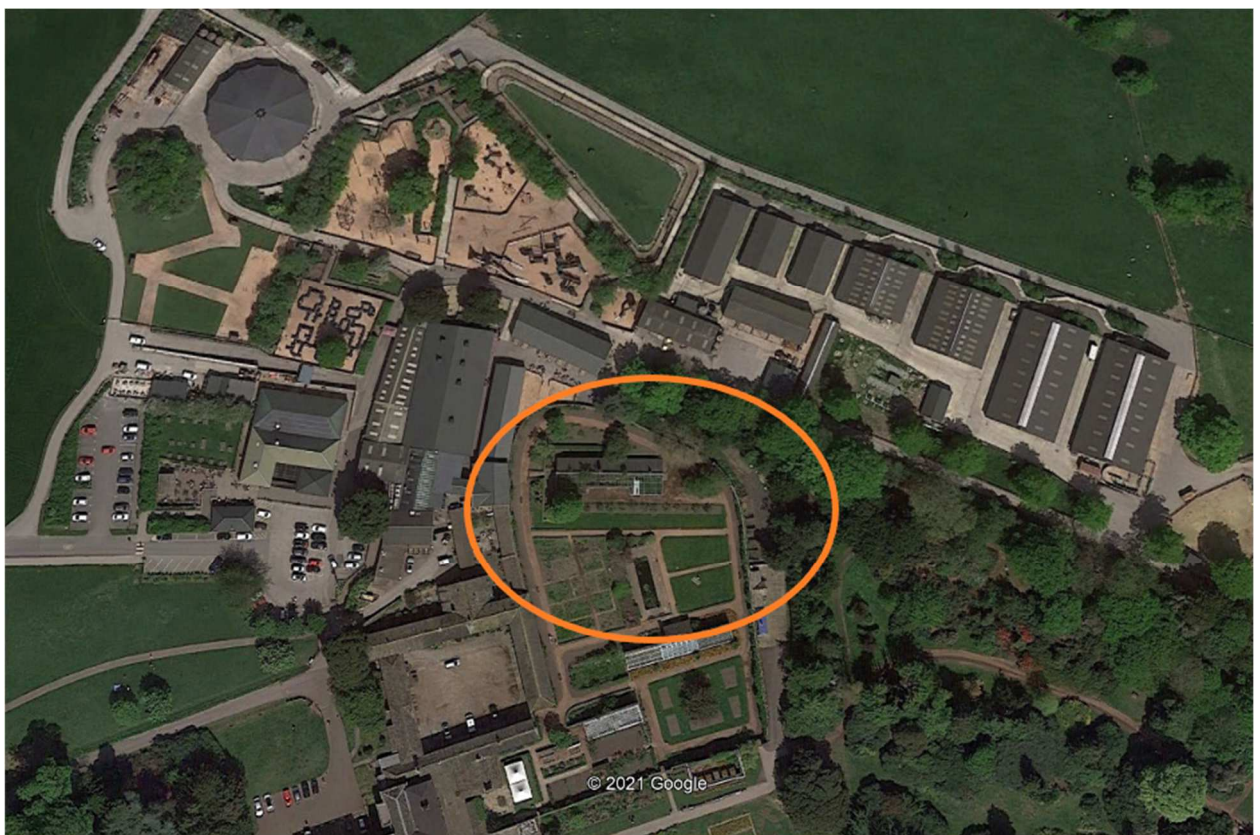
1.2 Survey Details

- 1.2.1 The survey took place during January 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 We have been provided with a topographical survey with tree positions plotted. Where surveyed trees were not included on the topographical survey the tree positions were plotted using enhanced GPS technology (1-2m 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 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 Cannon Hall is a country house museum, located between the villages of Cawthorne and High Hoyland, around 5 miles west of Barnsley, South Yorkshire.
- 2.1.2 The survey area is within and adjacent to the walled garden area.
- 2.1.3 The approximate area of the survey is highlighted in the image below (Google Earth, 2019):



3. The Trees

3.1 Legal

- 3.1.1 Due to the large potential penalties for illegally carrying out work to protected trees, before authorising any tree works a check should be made with the Local Planning Authority to see if the trees are covered by a Tree Preservation Order or if they are within a Conservation Area. If either applies, then statutory permission is required before any works can take place.
- 3.1.2 When appointing a tree surgeon, only properly qualified and experienced companies should be used, who have adequate Public Liability and Employer's Liability Insurance.
- 3.1.3 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 9 items of woody vegetation, comprised of 8 individual trees and 1 group of trees.
- 3.2.2 Of the surveyed trees: 5 trees are retention category 'B', and 4 trees are retention category 'C' (explanatory details regarding the retention categories are included at Appendix 3).
- 3.2.3 Species diversity at the site is relatively good, including Holm Oak, Birch, Yew, Chestnut, Ash, Pear and Apple. Most of the trees are early mature to mature.
- 3.2.4 An access track runs to the east of the walled garden area. Trees along this boundary area include T1 to T6. These trees form part of the wider area of tree planting and collectively form a high value feature.
- 3.2.5 Tree T6 is a large imposing Ash, with good landscape value. Many of the Ash trees in the area show symptoms consistent with 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.

- 3.2.6 To the east of the survey area is a mature Yew T4, with good arboricultural value and good prospects.
- 3.2.7 The Red Horse Chestnut T5 and Holm Oak T1 provide some visual amenity, yet they both have stem defects that are likely to limit their long-term prospects.
- 3.2.8 Within the walled garden area, the tree cover primarily consists of a collection of small well-managed fruit trees, including T7, T8 and G9. The wider area includes an extensive collection of pear trees. Most of the trees are managed by espalier pruning, against walls or wires, or other cyclical pruning to encourage fruit production. This management results in most trees having a relatively small size and most trees within this area fall outside the scope of this BS5837 survey.
- 3.2.9 Some trees were covered in dense Ivy or were inaccessible (as detailed in Appendix 4). In such cases measurements were estimated and the condition values are indicative only.
- 3.2.10 The tree Root Protection Area (RPA) for each tree has been plotted as a polygon centred on the base of the stem. Due to the presence of roads, structures, topography (and past tree management) the RPA is likely to be a simplified representation of the tree roots actual morphology and disposition. However, detailed modifications to the shape of the RPA would largely be based on conjecture and so have been avoided.
- 3.2.11 Some lower value tree, hedge and shrub groups do not have RPAs detailed on tree plans. The detailed extent and spread of these low value groups, in conjunction with the tree schedule, is sufficient to assess the associated potential constraints.

3.3 Photographs



Photo 1: Looking south, T1 to T3



Photo 2: Looking east, T5 and T6



Photo 3: Looking north, T5, T6 & T7



Photo 4: Looking south, T6 & T7



Photo 5: Looking west, T8 & G9



Photo 6: Looking east, T8 & G9

4. Arboricultural Impact Assessment

4.1 Proposed New Development

- 4.1.1 It is proposed to undertake a conversion of the North Range building into a training venue including proposed drainage and LPG tank.
- 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 as part of the new development design.
- 4.2.2 As such the development will have no negative arboricultural impact.

4.3 Indirect Impacts

- 4.3.1 The tree Root Protection Area (RPA) detailed on the Tree Plans at Appendices 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.
- 4.3.2 Potentially damaging activities are proposed in the vicinity of retained trees. The new drainage encroaches close to and into the edge of the RPA of T6 and T7. Construction within the RPA, can have negative impacts on tree roots. However, the encroachment is very minor, and the detailed RPA for these trees is likely to be a slightly exaggerated representation of the trees actual rooting area. As such, it is unlikely that significant roots will be within these areas and the retained tree should remain largely unaffected by the works, provided care is taken during construction.
- 4.3.3 The design of the new development has considered the trees crown position in relation to the development. While not urgent, it is advised to raise the low hanging crown of T1 to avoid conflict with construction traffic and to give adequate provision for future tree growth.
- 4.3.4 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.

4.4 Protection of the Retained Trees

- 4.4.1 The retained trees will require protection by fencing. The protective fencing for this site should be located to protect the RPAs of the retained trees as detailed on the attached Tree Impacts Plan at Appendix 6. The protective fencing will be appropriate to the degree and proximity of likely construction works. In this instance, it is suggested (if acceptable by the LPA) an adequate level of protection for the trees could be provided by heavy duty plastic mesh secured to steel stakes, or 'Heras' type fencing, of welded mesh panels on rubber or concrete feet.
- 4.4.2 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.
- 4.4.3 Access to the development work area is within the RPA of retained trees. As such, where existing hard surfaces are not present ground protection should be used to avoid compaction of the soil which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.
- 4.4.4 The new temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. Interlinked ground protection boards are advised.
- 4.4.5 If required by the Local Planning Authority, an associated Arboricultural Method Statement, detailing protective fencing specifications and construction methods close to the retained trees can be provided.

5. Signature

I trust this report provides all the required information.

Signed



.....

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

11th February 2021

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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 previously worked 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.

Mr Dave Farmer FdSc (Arb), MArborA, PTI (Lantra).

Dave has a Foundation Degree in Arboriculture (with Distinction) and is qualified in Professional Tree Inspection. He is a Professional Member of the Arboricultural Association and an Associate of the Institute of Chartered Foresters. Dave has many years of experience within the tree care profession, including lecturing in arboriculture. His work focuses on diagnosing potential tree risk problems, and recommending appropriate treatments and work programmes.

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, TechArborA

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.

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 black 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		Maturity	Measurements				Crown (m)				Tree Condition							Value		Management	
	Common Name	Latin Name		Height (m)	Stems	Stem Diameter (mm)	Estimated	Ave Height	N	E	S	W	Roots	Stem	Crown	Comments	Physiological	Structural	Life Expectancy	Amenity	Category	Works
T1	Holm Oak	<i>Quercus ilex</i>	Early-mature	11	1	550	Yes	2.5	1	3	8	7	Limited access around base. Increase in soil level	Single stemmed. Slight lean. Minor cavity. Minor decay to rear of stem	Normal. Slightly unbalanced	Green waste over stem base.	Good	Fair	20 to 40 yrs	Moderate	B	Lifrt low hanging crown over access drive to clear 4m from ground level
T2	Holm Oak	<i>Quercus ilex</i>	Early-mature	10	1	300	Yes	2.5	4	3	4	5	Limited access around base. No visual defects	Single stemmed. Vertical	Normal	Slightly suppressed shrubby form.	Good	Fair	20 to 40 yrs	Moderate	C	No action required
T3	Birch	<i>Betula pendula</i>	Early-mature	15	1	150	No	3.5	4	3	2.5	4	Increase in soil level. Ground level changes. Adjacent ground works	Single stemmed. Vertical	Normal. Small / sparse	Green waste at base, levels drop to north 0.5m from stem.	Fair	Fair	10 to 20 yrs	Moderate	C	No action required
T4	Yew	<i>Taxus baccata</i>	Mature	13	1	700	No	2	4	5	5	5.5	No visual defects. Increase in soil level	Single stemmed. Vertical	Normal. Minor deadwood		Good	Good	>40 yrs	Moderate	B	No action required
T5	Horse Chestnut	<i>Aesculus × carnea</i>	Early-mature	13	1	480	No	3.5	3	4	4	4	Soil heave. Soil erosion. Ground level changes	Single stemmed. Vertical. Stem cankers typical of species	Normal. Minor deadwood	Situated on mound. Exposed shallow roots with damage.	Fair	Fair	20 to 40 yrs	Moderate	C	No action required
T6	Ash	<i>Fraxinus excelsior</i>	Mature	19	1	700	No	3.5	9	5	9	9	No visual defects	Single stemmed. Vertical/sln south. Bark damage. Minor cavities. Minor decay	Minor dieback. Minor deadwood	Crown growing close to development area	Fair	Fair	20 to 40 yrs	Moderate	B	No action required. Could be reduced away from development if required

Tree ID	Tree Species		Maturity	Measurements				Crown (m)				Tree Condition						Value		Management		
	Common Name	Latin Name		Height (m)	Stems	Stem Diameter (mm)	Estimated	Ave Height	N	E	S	W	Roots	Stem	Crown	Comments	Physiological	Structural	Life Expectancy	Amenity	Category	Works
T7	Pear	<i>Pyrus communis</i>	Mature	8	2	320, 390	No	2.5	3	5	4	5	No visual defects	Twin stemmed. at base. Old pruning wounds. Minor cavity	Normal. Minor deadwood	Within grass area surrounding footpaths	Good	Fair	20 to 40 yrs	Moderate	B	No action required
T8	Pear	<i>Pyrus communis</i>	Early-mature	6	1	370	No	2	4	3.5	4	3.5	No visual defects. Ground level changes	Single stemmed. Slight lean	Normal. Old pruning wounds. 2m from building	Land drops to south, stopping root growth towards building	Fair	Fair	10 to 20 yrs	Low	C	No action required
G9	Apple	<i>Malus sp</i>	Mature	5	1	400	Yes	2	2	3	3	3	No visual defects. Limited access around base	Single stemmed. Slight lean. Ivy covered. Minor cavities. Minor decay	Normal. Small / sparse	Ivy prevented detailed inspection	Fair	Fair	10 to 20 yrs	Moderate	B	No action required



Appendix 5:
Tree Constraints Plan
 Cannon Hall Farm, Cawthorne, S75 4AT.
 Ref: AWA3590

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

SCALE: 1:500 PAPER: A3

	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

