TREE CONSULTANTS

ARBORICULTURAL REPORT

with Impact Assessment &
to **BS5837:2012** at:

Cannon Hall Farm,
Shire Horse Stables,
Cawthorne,
Barnsley
S75 4AT

Prepared for:
WALKER ASSOCIATES ARCHITECTS LLP

Date: *July 2020*

Reference: *AWA3203*

Institute of Chartered Foresters
Registered Consultant

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Union Forge, 27 Mowbray Street, Sheffield, S3 8EN. AWA Tree Consultants Limited. Company No. 8520123. Registered in England & Wales.

Contents

1. Introduction

1.1 Instructions and Brief

1.1.1 We have been instructed by Walker Associates Architects LLP 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 July 2020.

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 on an Ordnance Survey map base-layer 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 The tree survey data collection was carried out by James Brown BSc (Hons) (Arb), MArborA, PTI (Lantra), Arboriculturist at 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 and detail of the impacts of the new development refer to the Tree Impacts Plan at **Appendix 5**.

2. The Site

2.1 Location and Description

2.1.1 The site is located 5 miles west of Barnsley and to the north west of the village of Cawthorne.

2.1.2 The site forms part of Cannon Hall Farm, and currently consists of several barn structures, areas of hard standing and fields for grazing animals. Further areas of Cannon Hall Farm are located to the north and east, and the grounds of Cannon Hall are located to the south and west.

2.1.3 The approximate survey area has been highlighted in the (2019 Google Earth) image below:

3. The Trees

3.1 Legal

3.1.1 It is understood trees at the site are protected by virtue of a Tree Preservation Order (TPO).

3.1.2 Due to the large potential penalties for illegally carrying out work to protected trees, before authorising any tree works statutory permission is required from the Local Authority.

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 11 items of woody vegetation, comprised of 9 individual trees and two small tree groups. Of the surveyed trees, two trees are retention category `A', one tree is retention category `B' and the remaining 8 trees are retention category `C' (explanatory details regarding the retention categories are included at Appendix 3).

3.2.2 The two mature Lime trees (T1 and T2) form part of an historic avenue parallel to a footpath and access road to the farm. Although these trees have some defects, they provide a high level of amenity value, being visually prominent and having historical importance.

3.2.3 The other trees are generally of low value, yet collectively they provide some landscape value and are in keeping with the surrounding landscape character.

3.2.4 The tree Root Protection Area (RPA) detailed on the tree plan at Appendix 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. The 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.

4. Arboricultural Impact Assessment

4.1 New Development

4.1.1 New stables with a concrete base and surrounding aggregate surfacing have been installed within the RPA of the surveyed trees.

4.1.2 The observed and potential impacts on the trees from the works, required to construct the new development are the subject of this arboricultural impact assessment.

4.2 Impacts to Trees

4.2.1 The mature high value Lime trees, T1 and T2, are close to the new stables. It is likely that non-structural roots from these trees were within the footprint of the new stables. It is possible that some roots were damaged during the works and there is the potential that the ground was compacted as part of the works.

4.2.2 The crowns of both Lime trees have minor deadwood and minor deadwood. Other than this, they appear to be of reasonable vigour are not showing any significant signs of dieback or any other symptoms that are consistent with significant root damage. In some cases, symptoms can take several years to be clearly visible, although it is possible that the trees will tolerate any damage and continue to grow with no significant negative impacts.

4.2.3 The other trees T3 to T7 may have had some minor root damage or disturbance as a result of the development works. Yet due to their younger age and good vigour it is unlikely they will have any significant negative impacts resulting from the works. In general, younger trees tolerate root damage better than older, more mature trees.

4.3 Recommended Tree Management

4.3.1 No tree pruning or ground works are recommended to the surveyed trees, in relation to the construction of the new stables.

4.3.2 It is advised to apply a 5 to 10cm layer of well-rotted organic mulch, such as wood chips, over the available area of the tree root systems. The mulch helps condition the soil, moderates soil temperatures, maintains moisture, and reduces competition from weeds and grass. The mulch should extend as far out from the tree as practical for the site.

4.3.3 It is advised that the trees T1 and T2 are inspected by a suitably qualified professional on a regular basis, approximately every 12 months for the next 3 years. If these inspections find dieback of the crown, failure of large branches or limbs, or other symptoms that could be related to the secondary infection of a weakened tree, some form of management may be required.

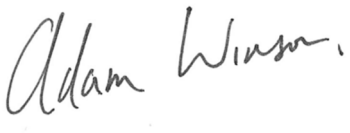
4.3.4 Following the findings of the annual inspections, compensatory crown pruning, with the aim of further aiding the recovery of the trees T1 and T2, may be suitable. Pruning after root severance is a suggested means of rebalancing growth within the tree. Pruning aims to reduce nutrient requirements and water deficits in the crown and thereby lessen physiological stress and dieback. Pruning is may also provide temporary respite by reducing the 'sail area' of the canopy. This would reduce the wind resistance of the crown and the leverage exerted on the root system. Suitable pruning management would be via reducing the crowns outer branches, cutting back to suitable points, by a maximum of 1.5m to 2m, or around 20% of leaf area, carried out according to British Standard 3998: 2010 – Tree work: recommendations.

4.3.5 The trees are covered by a Tree Preservation Order, as such, statutory permission is required before any works can take place. Statutory permission is not required for the removal of deadwood.

5. Signature

I trust this report provides all the required information.

Signed



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

24th June 2020

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Appendices

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 Patrick Rowntree *Cert Arb L3, TechArborA, PTI (Lantra)*
Patrick is a trained arborist with 5 years of experience in both the private and commercial sectors and is a technician member of the Arboricultural Association. Having travelled the world, both working as an arborist and playing professional rugby, Patrick was awarded a Distinction in the Extended Diploma in Forestry & Arboriculture and is qualified in Professional Tree Inspection. Patrick now uses his work and education experience at AWA, focusing on accurate tree data collection for tree surveys for development projects and assisting the team in the preparation of tree reports and tree plans to BS 5837:2012.

Mr Drew Leeper *Cert Arb L3, TechArborA*
Drew has over 10 years' experience within the arboricultural sector and was awarded Distinction in the Extended Diploma in Forestry & Arboriculture. From working abroad in Canada as a climbing arborist and returning home to running his own tree care firm. Drew has also been fortunate enough to gain valuable experience working at the Royal Botanical Gardens of Kew. He now uses his work and education experience at AWA, focusing on accurate tree data collection for tree surveys for development projects and assisting the team in the preparation of tree reports and tree plans 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 = retention most desirable. These trees are of very high quality and value with a good life expectancy.

B = retention desirable. These trees are of good quality and value with a significant life expectancy.

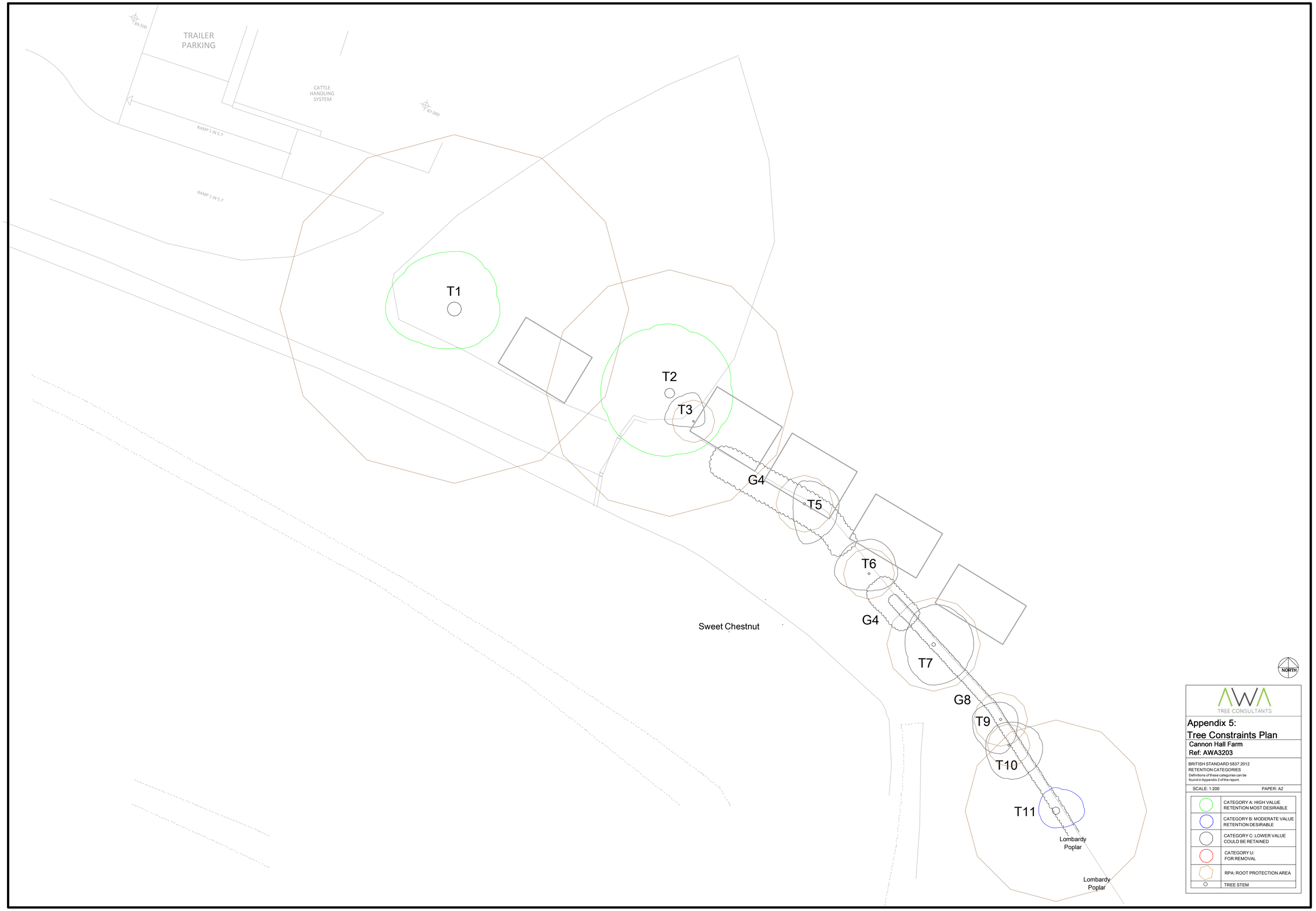
C = trees which could be retained. These trees are of low or average quality and value, and are in adequate condition to remain until new planting could be established.

U = trees for removal. These trees are in such a condition that any existing value would be lost within 10 years.

	Tree Species			Measurements				Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*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	Lime	*Tilia x europaea*	Mature	20	1	1230	No	6	5	4	3.5	6	Bark damage to exposed buttress roots.	Single stemmed. Vertical. Epicormic growths	Minor dieback in upper crown. Minor deadwood	Dense sucker growth prevented detailed inspection.	Good	Good	>40 yrs	High	A	No action required. Undertake future tree inspection in 12months
T2	Lime	*Tilia x europaea*	Mature	20	1	870	No	5	6	5.5	5.5	6	Soil compaction	Single stemmed. Vertical. Epicormic growths	Very minor dieback. Minor deadwood	Dense suckers at base prevented detailed inspection.	Good	Good	>40 yrs	High	A	No action required. Undertake future tree inspection in 12months
T3	Hawthorn	*Crataegus monogyna*	Semi-mature	6	1	150	Yes	3.5	2.5	1	0.5	2.5	Limited access around base	Single stemmed. Slight lean. Bark damage. Old pruning wounds. Stubs	Old pruning wounds	On raised ground behind dry stonewall. Slight lean east. Railing embedded in stem. Heavily pruned	Fair	Fair	10 to 20 yrs	Low	C	No action required
G4	Hazel. Blackthorn.	*Corylus sp. Prunus sp.*	Semi-mature	5	10+	50	No	1	See plan				No visual defects	Twin stemmed. Multiple stemmed		Shrubby linear group of young to semi-mature shrubs	Good	Good	20 to 40 yrs	Moderate	C	No action required
T5	Lime	*Tilia x europaea*	Semi-mature	8	1	200	No	1	2	3	3.5	1	No visual defects	Single stemmed. Twin stemmed. at 1m. at 2m. Tight union. Partially included bark at 1.5m. Old pruning wounds. Slight lean east	Minor deadwood. Old pruning wounds. Snapped /hanging branches	Bulging growth at base - likely from graft.	Fair	Fair	20 to 40 yrs	Moderate	C	No action required

	Tree Species			Measurements				Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Ave Height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T6	Lime	*Tilia x europaea*	Semi-mature	8	1	180	No	2	3	2.5	1.5	3	Soil compaction	Single stemmed. Vertical	Normal	Large suckers at base.	Good	Good	>40 yrs	Low	C	No action required
T7	Lime	*Tilia x europaea*	Semi-mature	12	1	330	No	1.5	3.5	3.5	3.5	2.5	Soil compaction	Single stemmed. Vertical. Old pruning wounds. Stubs	Minor deadwood		Good	Good	>40 yrs	Moderate	C	No action required
G8	Hawthorn. Ash.	*Crataegus sp. Fraxinus sp.*	Young	3	10+	20	No	0	See plan				No visual defects	Single stemmed. Multiple stemmed	Normal	Young hedge bordering fence. Occasional ash sapling.	Good	Good	>40 yrs	Low	C	No action required
T9	Lime	*Tilia x europaea*	Semi-mature	9	1	190	No	3	1.5	1.5	3	2.5	No visual defects	Single stemmed. Vertical	Normal		Good	Good	>40 yrs	Low	C	No action required
T10	Ash	*Fraxinus excelsior*	Young	10	2	90, 120	No	6	2	3	3	2	Soil compaction	Twin stemmed. at base. Slight lean east. Old pruning wounds. Bark damage	Minor deadwood	One main stem previously removed at base.	Fair	Fair	10 to 20 yrs	Low	C	No action required

	Tree Species			Measurements				Crown (m)					Tree Condition							Value		Management
Tree ID	*Common Name*	*Latin Name*	*Maturity*	*Height (m)*	*Stems*	*Stem Diameter (mm)*	*Estimated*	*Ave Height*	*N*	*E*	*S*	*W*	*Roots*	*Stem*	*Crown*	*Comments*	*Physiological*	*Structural*	*Life Expectancy*	*Amenity*	*Category*	*Works*
T11	Poplar	*Populus nigra* 'Italica'	Early-mature	25	1	640	No	5	2	2.5	1.5	1.5	Exposed roots. Soil compaction to south and west. Bark damage	Single stemmed. Vertical. Epicormic growths. Twin-stemmed at 2m with tight union. Partially included bark	Minor deadwood	Compaction from footpath	Good	Fair	20 to 40 yrs	Moderate	B	No action required



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Appendix 5:
Tree Constraints Plan

Cannon Hall Farm
Ref: AWA3203

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