



Matt Reid Dip Arb L6 (ABC) MICFor MArborA RCArborA Registered Arboricultural Consultant Chartered Arboriculturist



## ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION PLAN

Relating to:



At:

HAILSTONE BARN, CHERRINGTON

Instructed by:

MR T TARLTON

MHP ref: 22195 HAILSTONE BARN, CHERINGTON TS AIA TPP V2







### **CONTENTS:**

1	INTRODUCTION	.1
2	GENERAL	.2
3 .	ARBORICULTURAL SURVEY	.4
4	TREE CONSTRAINTS AND DESIGN ADVICE	.5
5	ARBORICULTURAL IMPACT ASSESSMENT (AIA) & TREE PROTECTION PLAN	
(TPF	>)	.7
6	CONCLUSION	.8
APP	PENDIX 1 – TREE SURVEY SCHEDULE	
APP	PENDIX 2 – ARBORICULTURAL IMPACT ASSESSMENT AND TREE PROTECTION	
PLA	N	

#### Issue record

Date	Version	Notes	Quality check
21.09.2022	V1	Initial issue	21.09.2022
16.03.2023	V2	Tree officer feedback. Addition of AMS details. 5.2 & Appendix 2	16.03.2023



#### 1 INTRODUCTION

#### 1.1 Introduction

- 1.1.1 My name is Matt Reid. I am a Chartered Arboriculturist and Registered Consultant of the Arboricultural Association and the Institute of Chartered Foresters. I hold the Level 6 Diploma in Arboriculture (ABC Awards) as well as other technical and trade level qualifications. I am also a Professional Member of the Arboricultural Association.
- 1.1.2 I have worked in the arboricultural industry since 1999. My initial trade and professional experience comprised six years as an arboricultural contractor and climbing arborist. Following this I spent seven years as a local government tree officer. Since 2012 I have worked in private practice as an arboricultural consultant specialising in planning related matters and tree risk management.

#### 1.2 Background

1.2.1 An application for planning permission is to be submitted for erection of ancillary accommodation at Hailstone Barn, Cherrington; hereafter referred to as 'the site'.

#### 1.3 Site details

1.3.1 For location purposes, the site can be located using grid reference ST 90504 96540.

#### 1.4 Instruction and scope

- 1.4.1 I am instructed by Mr T Tarlton to visit the site and to carry out an assessment of arboricultural features in accordance with British Standards (BS) 5837:2012 'Trees in Relation to Design Demolition and Construction – Recommendations'.
- 1.4.2 I am to prepare the following information in relation to the proposals:
  - Tree survey in accordance with BS5837:2012
  - Arboricultural Impacts Assessment
  - Tree Protection Plan.



#### 2 GENERAL

#### 2.1 Statutory tree protection and other designations

2.1.1 I have carried out desk-based tree-related constraints checks in relation to the site.

These are outlined in *Table 1*.

	Statutory tree protection and other designations	
	General summary information	Relevant to site?
Conservation Area <sup>1</sup>	<ul> <li>All trees with a trunk diameter greater than 75mm at 1.5m height are protected in the same way as for TPO (see below).</li> <li>Six weeks' notice must be given to the Local Planning Authority (LPA) prior to carrying out any tree works so that possible requirement for TPO can be assessed.</li> </ul>	No
Tree Preservation Order (TPO) <sup>2</sup>	<ul> <li>It is an offence to cut down, uproot, top or lop, wilfully damage or wilfully destroy relevant trees or woodlands.</li> <li>Formal permission must be applied for (and granted) by the LPA before carrying out tree works.</li> <li>Penalties of up to £20K (Magistrates Court) or unlimited fine (Crown Court).</li> </ul>	No
Timber volume	<ul> <li>Forestry Act 1967 limits felling of volumes of timber in any calendar quarter to 5 cubic metres (m³) unless a Felling Licence has been issued by the Forestry Commission.</li> <li>Any felling beyond this threshold may result in prosecution and/or issue of a Restocking Notice</li> </ul>	No
Ancient woodland <sup>3</sup>	Ancient Woodland is broadly defined as land that has been continuously wooded since 1600AD. It is irreplaceable habitat and is afforded a high level of protection by the National Planning Policy Framework (NPPF).	No
Ancient/veteran trees <sup>4</sup>	<ul> <li>Broadly defined as trees that are old for their species that have biodiversity, cultural and heritage value.</li> <li>Like ancient woodland such trees are irreplaceable habitats and are afforded a high level of protection by the National Planning Policy Framework (NPPF).</li> </ul>	None recorded

Table 1- statutory tree protection and other designations.

#### 2.2 Limitations

- 2.2.1 In some instances, I have been unable to access or clearly observe the trunks of trees. Where this is the case, I have done my best to accurately estimate dimensions and tree condition.
- 2.2.2 Trees are living organisms and self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. As such, the findings and recommendations of my tree survey are limited to 24 months from the date of my site visit.

<sup>&</sup>lt;sup>1</sup> My Cotswold: Cotswold District Council a Accessed 14.09.2022.

<sup>&</sup>lt;sup>2</sup> My Cotswold: Cotswold District Council a Accessed 14.09.2022.

<sup>&</sup>lt;sup>3</sup> https://magic.defra.gov.uk/magicmap.aspx Accessed 14.09.2022.

<sup>&</sup>lt;sup>4</sup> https://ati.woodlandtrust.org.uk/ Accessed 14.09.2022.



- 2.2.3 It is beyond the scope of this report to assess the potential for woody vegetation to cause subsidence/heave-related and/or direct contact-type structural damage. This matter may need to be addressed separately by a suitably qualified structural engineer.
- 2.2.4 In some instances, due to limitations of topographical information, the locations of some tree individuals/groups may be approximated.

#### 2.3 Wildlife informative

- 2.3.1 Tree works should not be carried out until a reasonably detailed inspection of relevant trees has been carried out to determine if bat roosts and/or bird nests are present.
- 2.3.2 It is a criminal offence to intentionally damage/destroy the nest of any wild bird while it is in use or being built. Similarly it is an offence to intentionally/recklessly disturb roosting bats or to damage or destroy a bat roost.
- 2.3.3 The Arboricultural Association publishes useful advice in relation to trees and nesting birds<sup>5</sup>.
- 2.3.4 Helpful advice with regards to bats and tree work is published by the UK Government<sup>6</sup>, the Arboricultural Association<sup>7</sup> and The Bat Conservation Trust<sup>8</sup>.

<sup>&</sup>lt;sup>5</sup> https://www.trees.org.uk/Help-Advice/Public/When-is-the-bird-nest-season

<sup>&</sup>lt;sup>6</sup> https://www.gov.uk/guidance/bats-protection-surveys-and-licences

<sup>&</sup>lt;sup>7</sup> https://www.trees.org.uk/Help-Advice/Public/Bats-and-trees-Who-does-what-where

<sup>8</sup> https://www.bats.org.uk/about-bats/where-do-bats-live/bat-roosts/roosts-in-trees



#### 3 ARBORICULTURAL SURVEY

- 3.1 Site visit
- 3.1.1 I visited the site on 24<sup>th</sup> August 2022.
- 3.2 Findings
- 3.2.1 My findings are set out within the survey schedule at **Appendix 1**.



#### 4 TREE CONSTRAINTS AND DESIGN ADVICE

### 4.1 Tree Quality Assessment

4.1.1 Surveyed trees are represented using colour coding to indicate their quality and thereby suitability for retention. The quality assessment is as follows:

Quality grade	Definition
А	Green: high quality with estimated remaining life expectancy of at least 40 years.
В	Blue: moderate quality with estimated remaining life expectancy of at least 20 years
С	Grey: low quality with estimated remaining life expectancy of at least 10 years
U	Red - unsuitable for retention. Cannot realistically be retained for longer than 10 years

#### 4.2 Below Ground Constraints

- 4.2.1 In accordance with BS5837:2012, below ground constraints, or Root Protection Areas (RPAs), for the surveyed trees are plotted onto the Tree Survey and Constraints Plan. These are represented as a circle with a broken red line centred on the base of each tree stem with a radius of 12 times stem diameter (measured at 1.5m above ground level.
- 4.2.2 BS5837:2012, a root protection area (RPA) is defined as "a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority". "The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained".
- 4.2.3 Root systems can be damaged in several ways:
  - Root severance



- Soil compaction
- Contamination by spilled materials eg cement/diesel.

#### 4.3 Above Ground Constraints

- 4.3.1 Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, perceived fear of tree failure during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated future requests to fell or heavily prune retained and protected trees.
- 4.3.2 The above ground parts of trees can be damaged in several ways:
  - Impact damage through contact with construction site plant
  - Inappropriate pruning
  - Other factors, for example, heat damage caused by bonfires.



## 5 ARBORICULTURAL IMPACT ASSESSMENT (AIA) & TREE PROTECTION PLAN (TPP)

#### 5.1 Arboricultural Impact Assessment

- 5.1.1 A combined AIA and TPP is included at **Appendix 2**.
- 5.1.2 The plan shows the tree survey and constraints information in relation to the proposed layout and confirms that no existing trees must be removed.
- 5.1.3 There is a slight encroachment by the proposed new structure into the RPA of T3. However, in my view the tree is healthy enough to be able to withstand this comparatively minor root loss without showing any obvious symptoms of harm.
- 5.1.4 Lightweight structures are proposed to be constructed within the RPAs of T2 and T3. In my view, provided that these structures are established on no-dig above ground cast concrete slabs they will not result in direct or indirect harm to the rooting systems of the trees. Any interception of rainfall by the new structures is likely to be easily offset by the creation of more consistent soil moisture content and condensation formation against the underside of the foundation slabs.
- 5.1.5 At construction, the shuttering for the above ground foundation slabs must be lined with heavy duty DPC-type plastic membrane to prevent any harmful leaching into the soil. Similarly, hand-excavated post holes located to avoid significant tree roots must also be lined prior to the addition of concrete dry mix to secure fence posts.
- 5.1.6 The area between T2 and T3 and proposed new main building has potential to be further compacted by construction activities. For this reason, and to ensure consistency of finished levels, the entire area must be protected prior to the commencement of any work on site by tree protection barriers and a load-distributing cellular confinement system of ground protection.

#### 5.2 Tree Protection Plan

- 5.2.1 The Tree Protection element of the plan demonstrates how retained trees can be effectively retained as part of the construction of the proposals.
- 5.2.2 Locations and specifications of tree protection barriers and ground protection are provided.
- 5.2.3 A methodology and sequence of operations is also provided for works in proximity to T2 and T3.
- 5.2.4 Tree protection measures must be put in place before any other work is carried out on site and remain in place for the duration of construction works.



#### 6 CONCLUSION

#### 6.1 Conclusion

- 6.1.1 I conclude that the development proposals are feasible from an arboricultural perspective for the following key reasons:
  - No significant trees shall be removed to enable the construction of the proposals.
  - Tree protection measures and working methodologies can be put in place to ensure that construction works do not result in damage to the retained trees.



### **APPENDIX 1 – TREE SURVEY SCHEDULE**



## TREES

Ref	Common name	Height (m)	Est	Stem dia (mm)	Est	N	Est	E	Est	S	Est	w	Est	Life stage	Special status	General observations & management recommendations	Struct. cond.	Phys. cond.	ULE	Quality grading	RPA radius (m)	RPA area (m2)	ТРО
T1	Apple	2.5	#	150	#	1.5	#	1.5	#	1	#	2	#	EM	None	Previously hard pruned with substantial regeneration.	Fair	Good	10+	C1	2	10	None
T2	Hawthorn	7	#	400	#	2.5	#	4	#	4	#	5	#	М	None	Three stemmed from base.	Good	Good	20+	B1	5	72	None
Т3	Field maple	11	#	1020	-	6.5	-	6	-	5	-	7	#	М	None	Prominent tree in site.	Good	Good	40+	A2	12	470	None
T4	Hawthorn	6	#	350	#	4	#	3	#	2.5	#	2	#	М	None	Upper crown dieback.	Fair	Fair	10+	C1	4	55	None
T5	Common ash	18	#	500	#	6	#	6	#	8	#	7	#	М	None	Early onset ash dieback.	Good	Fair	10+	C1	6	113	None
Т6	Goat willow	10	#	550	#	7	#	6	#	5	#	4	#	М	None	Worthwhile tree. Twin stemmed from 1m height.	Good	Good	20+	B1	7	137	None
Т7	Hawthorn	7	#	450	#	4	#	3.5	#	3.5	#	3.5	#	М	None	Three stemmed from 1.5m height. Lower trunk longitudinal split from fork down to ground level.	Poor	Fair	<10	U	5	92	None
Т8	Field maple	11	#	550	#	6	#	6	#	5	#	4	#	М	None	Twin stemmed from base.	Good	Good	20+	B1	7	137	None
Т9	Common ash	10	#	400	#	5	#	5	#	4	#	4	#	EM	None	Typical for species and age.	Good	Fair	10+	C1	5	72	None

## GROUPS

Ref	Common names of woody species present	Estimated average trunk diameter at 1.5m (mm)	Estimated minimum & maximum heights (m)	Estimated average height (m)	Estimated average canopy height (m)	Life stage	Special status	General observations & management recommendations	Struct. cond.	Phys. cond.	ULE	Quality grading	RPA radius from canopy edge (m)	TPO
G1	Hawthorn, hazel	180	7-3	5	2	EM	None	Linear group beside wall.	Fair	Good	20+	В2	As shown on plan	None
G2	Damson, hawthorn, apple, pear	250	7-3	4	1.5	EM	None	Small orchard.	Fair	Good	20+	B2	As shown on plan	None

## KEY

Assessment criteria	Description
Reference number on plan	T: Tree, G: Group, W: Woodland, H: Hedgerow. This reference is recorded on the Tree Survey and Constraints Plan against the relevant survey item.
Common name (Scientific name)	Common names: normal type. Scientific names where required: italic type in brackets
Heights	Unit: metres (m). Recorded to the nearest half metre for heights upto 10m and to the nearest whole metre for heights above 10m.
Stem diameter	Unit: millimetres (mm). Rounded to the nearest 10mm. Single and multi-stemmed trees are measured at 1.5m above highest ground level or otherwise as in accordance with Annex C, BS5837:2012.
Estimates	Measured tree dimensions are identified by an '-' in the adjacent 'Estimate' column. Where dimensions have been estimated (offsite, or otherwise inaccessible survey items) this is clearly identified by a '#' in the adjacent 'Estimate' column.
Crown spread	Unit: metres (m). Directions refer to the four compass points (north, east, south, west). Dimensions are rounded-up to the nearest half metre for heights up to 10m and to the nearest whole metre for heights above 10m.
Estimated average lateral spread	Unit: metres (m). For hedgerows only. An estimate of the average width between branch tips.

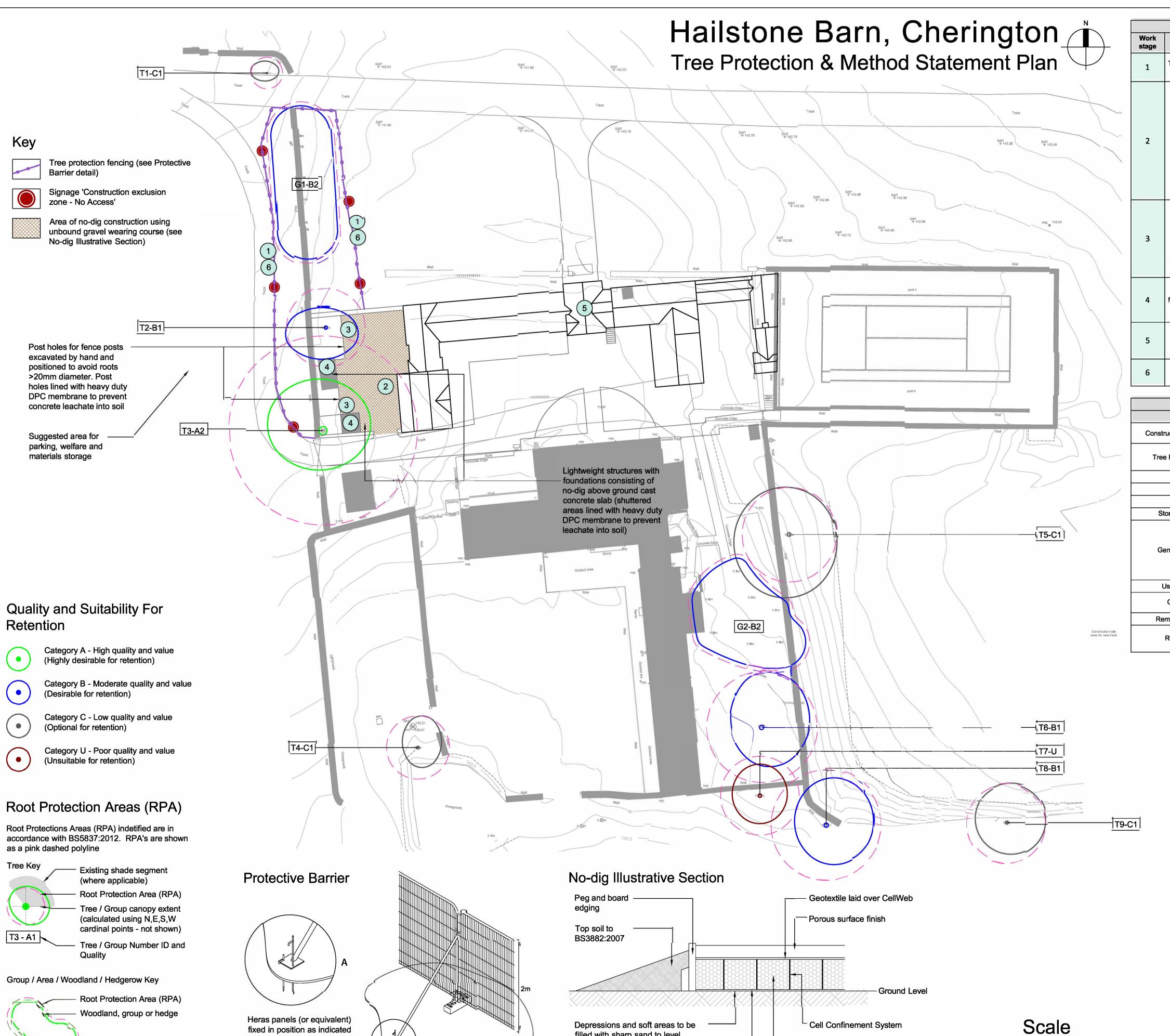


Assessment criteria	Description
Crown clearance height	Unit: metres (m). The existing height above ground level of:  • First significant branch and the compass direction of its growth: North (N), North-east (NE), East (E), South-east (SE) etc.  • Canopy (height between branch tips and ground level).
Life stage	Y – young (stake dependent), SM - Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature), EM – Early Mature (not yet having reached 75% of expected mature size), M – Mature (anything else up to normal life expectancy for the species), OM – Over Mature (anything beyond mature and in natural decline), V – Veteran, A - Ancient (any tree displaying characteristics described by the Ancient Tree Forum and referenced by Natural England).
Special status	<ul> <li>None</li> <li>Veteran: any tree judged to meet criteria as defined by the Ancient Tree Forum</li> <li>Ancient: any tree judged to meet criteria as defined by the Ancient Tree Forum1</li> </ul>
General observations and preliminary management recommendations	General observations are recorded in relation to a survey item's structural and/or physiological condition (eg the presence of any decay and physical defect) and /or any preliminary management recommendations that may be appropriate.
Structural condition	<ul> <li>Good: without any observable significant biomechnical structural weaknesses</li> <li>Fair: with minor biomechanical structural flaws. Some remedial action may be required</li> <li>Poor:with significant biomechanical weaknesses requiring intervention particularly where risk management is required.</li> </ul>
Physiological condition	<ul> <li>Good: no indications of impaired physiological function and in optimum condition for age and species</li> <li>Fair: with indicators of reduced vitality. Some intervention may be required</li> <li>Poor: with significantly impaired physiological function for age and species</li> </ul>
Remaining contribution	Useful life expectancy, or the length of time a tree's is estimated to be able to make a useful contribution, is expressed in years as: <10, 10+, 20+, 40+.
Quality grading	Assessed in accordance with Table 1, BS5837:2012. Colours relate to depiction on the Tree Constraints Plan.  • Category A (Green) Trees of high quality with an estimated remaining life expectancy of 40 years  • Category B (Blue) Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.  • Category C (Grey) Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.  • Category U (Red) Unsuitable for retention. Trees in such a poor condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.  Note - A, B and C trees are also given a sub-category of 1, 2 or 3 which reflects their arboricultural, landscape or cultural and conservation values respectively. Each subcategory has an equal weight, for example an A1 tree has the same retention priority as an A3 tree. More than one sub-category may be applied to a survey item as appropriate.
RPA radius	Root Protection Area (RPA): a layout design tool. Unit: metres (m). Radial distance from tree centre to define a circle that indicates on the Tree Survey Plan the minimum rooting area required to maintain tree's viability. Calculated in accordance with Annex D, BS5837:2012
RPA area	Unit: square metres (m²). The area of the RPA radius circle described above. Applies only to individual trees.

<sup>&</sup>lt;sup>1</sup> LONSDALE, D. (Ed). Ancient and other veteran trees: further guidance on management. The Tree Council. London. 2013.



# APPENDIX 2 - ARBORICULTURAL IMPACT ASSESSMENT AND TREE PROTECTION PLAN



filled with sharp sand to level

Non-woven geotextile (such as

TreeTex T300) laid over formation

required

Cells to be filled with 20-40mm

clean graded angular stone to

manufacturers details and

specifications

0123 5

with ground pins

G2 - A1

Tree / Group Number ID

A) stabiliser strut with base plate

secured with ground pins

		Sequence of site operations and Tree Protection	n Monitoring
Work stage	Task	Description	Tree Protection Monitoring
1	Tree protection barriers	Construct in locations and to specifications shown on the Plan.	Email photographs of tree protection in-situ to Cotswold District Council planning department for inclusion on the planning file
2	Install cellular confinement no-dig surfacing	<ul> <li>Fill in any hollows with sharp sand</li> <li>Lay out geotextile (eg Treetex T-300 or similar alternative) to cover area required</li> <li>Install peg and board edging to contain cellular system at edges</li> <li>Lay out cellular system (eg http://www.geosyn.co.uk/product/cellweb-tree-root-protection or similar alternative) and pin in place</li> <li>Working from the site interior back to the edges of the lightweight structures, fill-in the cellular system with Type 20/40 angular road stone containing NO FINES. Work into the back of the area from on top of the previously filled areas</li> <li>Add final gravel wearing course (at end of construction process to avoid damage)</li> </ul>	Email photographs works in process in relation to tree protection to Cotswold District Council planning department for inclusion on the planning file
3	Construct fences	<ul> <li>Work on top of no-dig surfaces and use ply sheeting as temporary ground protection near trees.</li> <li>Excavate post holes by hand. Roots smaller than 20mm diameter can be pruned back to the edge of the excavation using secateurs. If larger roots are encountered then backfill hole and re-dig.</li> <li>Line hole with DPC polythene to prevent leachate into soil.</li> <li>Fill holes with dry mix (or equivalent) and erect remainder of fence in normal way.</li> </ul>	Email photographs works in process in relation to tree protection to Cotswold District Council planning department for inclusion on the planning file
4	Construct foundations for sheds	<ul> <li>Cover footprints of structures at existing fround level with heavy duty polythene eg DPC course material. Leave an overlap at edges to fold up inside the edges of shuttering.</li> <li>Construct shuttering and line with polythene.</li> <li>Build shed base in the normal way and remove shuttering.</li> </ul>	Email photographs works in process in relation to tree protection to Cotswold District Council planning department for inclusion on the planning file
5	Main construction phase	NO ACCESS within CEZs at any time     Comply with all other Rules for Tree Protection shown on the plan	At monthly intervals, email photographs works in process in relation to tree protection to Cotswold District Council planning department for inclusion on the planning file
6	Remove tree protection barriers	Barriers must not be removed until the end of the main construction phase.	Provide Cotswold District Council with five working days' written notice that the barriers are to be removed

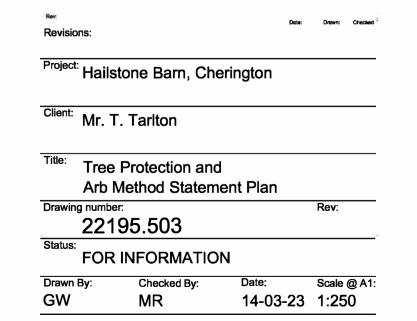
Arboricultural Method Statement (AMS) - General Rules					
	Description				
Construction Exclusion Zone	No access within CEZ at any time during the construction process unless specified and/or confirmed in writing with the Local Planning Authority (LPA)				
Tree Protection Barriers	<ul> <li>Must be constructed in accordance with the specification shown on the Plan</li> <li>Must have A2 all-westher notices attached at approximately 10m intervals reading 'CONSTRUCTION EXCLUSION ZONE - KEEP OUT'</li> </ul>				
Access	Site access shall be via the existing site entrance				
Car Parking	No car parking within CEZs and only within allocated site areas				
Welfare	Welfare provision shall be located within areas indicated on the Plan				
Storage of Materials	Materials shall be stored in the locations suggested on the Plan				
General Precautions	<ul> <li>No storage of materials that could be harmful to trees (eg cement, builders' sand) up-slope from any retained trees</li> <li>No fires</li> <li>No notices, cables, other services to be attached to retained trees</li> <li>No discharge of materials within 20m of any retained tree</li> <li>Mixing of cement must not be carried out upslope of any retained trees unless within a bunded and sealed area.</li> </ul>				
Use of Herbicides	No herbicides shall be used without prior confirmation in writing from the local planning authority.				
Contingencies	<ul> <li>In the event of damage to retained trees, cease work, photograph damage and inform the LPA</li> <li>Spillages must be thoroughly flushed through using clean water and the LPA informed.</li> </ul>				
Remedial Tree Works	Do not carry out any unspecified tree works without confirmation that this is acceptable from the LPA				
Responsibilities	<ul> <li>Project site manager shall hold responsibility to ensure that all key contractors and all other persons working on site have a reaponsibility to be aware of trees and to abide by tree protection procedures set out within the Plan</li> </ul>				

Tree survey summary									
Tree number on plan	Common name	Quality grading	RPA radius (m)	TPO					
T1	Apple	C1	2	None					
T2	Hawthorn	B1	5	None					
Т3	Field maple	A2	12	None					
T4	Hawthorn	C1	4	None					
T5	Common ash	C1	6	None					
Т6	Goat willow	B1	7	None					
Т7	Hawthorn	U	5	None					
Т8	Field maple	B1	7	None					
Т9	Common ash	C1	5	None					
G1	Hawthorn, hazel	B2	As shown on plan	None					
G2	Damson, hawthorn, apple, pear	B2	As shown on plan	None					

20

## **Notes**

- 1) Survey Date 24th August 2022.
- 2) This drawing has been produced to be printed in colour. If you have been given this drawing in monochrome please request a colour version.
- 3) Do not scale directly from this drawing.
- 4) This drawing is to be read in conjunction with all other relevant MHP drawings and information supplied by other consultants.





MHP ARBORICUTURAL 79 THE PROMENADE CHELTENHAM GL50 1PJ T 01242 259 259 E info@mhp-arb.com www mhp-arboriculture.com