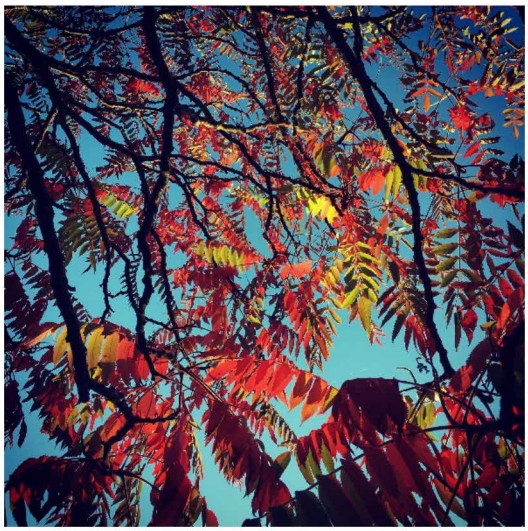


ARBORICULTURAL CONSULTANTS

mhp

[redacted] Dip Arb L6 (ABC) MICFor MArborA RCArborA
Registered Arboricultural Consultant
Chartered Arboriculturist

ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION PLAN

Relating to :

DEMOLITION OF EXISTING STRUCTURES AND CONSTRUCTION OF NEW RESIDENTIAL DEVELOPMENT AND ASSOCIATED INFRASTRUCURE

At:

FORMER BRISTOL STREET MOTORS, LONDON ROAD, STROUD

Instructed by:

ALTUS HOMES

MHP ref: 23196 BRISTOL STREET MOTORS, LONDON ROAD, STROUD_TS AIA TPP_V3

CONTENTS:

Issue record

Date	Version	Notes	Quality check
20.02.2024	V1	Initial issue	MR 20.02.2024
08.03.2024	V2	Revised layout	MR 08.03.2024
25.04.2024	V3	Client name change	MR 25.04.2024

1 INTRODUCTION

1.1 Introduction

1.1.1 My name is [redacted] 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 new residential development with associated infrastructure at former Bristol Street Motors, London Road, Stroud ('the site').

1.2.2 The local planning authority is Stroud District Council (SDC).

1.2.3 Baseline tree constraints information have been provided to inform the design process.

1.3 Instruction and scope

1.3.1 I was originally instructed by Piper Group 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'.

1.3.2 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[1]	All trees with a trunk diameter greater than 75mm at 1.5m height are protected in the same way as for TPO (see below). 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.	No
Tree Preservation Order (TPO)[2]	It is an offence to cut down, uproot, top or lop, wilfully damage or wilfully destroy relevant trees or woodlands. Formal permission must be applied for (and granted) by the LPA before carrying out tree works. Penalties of up to £20K (Magistrates Court) or unlimited fine (Crown Court).	No
Timber volume	Forestry Act 1967 limits felling of volumes of timber in any calendar quarter to 5 cubic metres (m^3) unless a Felling Licence has been issued by the Forestry Commission. Any felling beyond this threshold may result in prosecution and/or issue of a Restocking Notice	Yes
Ancient/veteran trees[3]	Broadly defined as trees that are old for their species that have biodiversity, cultural and heritage value. Like ancient woodland such trees are irreplaceable habitats and are afforded a high level of protection by the National Planning Policy Framework (NPPF).	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.

[1] Stroud planning (arcgis.com) Accessed 29.08.2023.
[2] Stroud planning (arcgis.com) Accessed 29.08.2023.
[3] https://ati.woodlandtrust.org.uk/ Accessed 29.08.2023.

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.

2.3 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[4].

2.3.4 Helpful advice with regards to bats and tree work is published by the UK Government[5], the Arboricultural Association[6] and The Bat Conservation Trust[7].

[4] https://www.trees.org.uk/Help-Advice/Public/When-is-the-bird-nest-season
[5] https://www.gov.uk/guidance/bats-protection-surveys-and-licences
[6] https://www.trees.org.uk/Help-Advice/Public/Bats-and-trees-Who-does-what-where
[7] 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 29th August 2023.

3.2 Findings

3.2.1 My findings are set out within the survey schedule at **Appendix 1**.

3.2.2 In broad summary, the key arboricultural features associated with the site are:

- A prominent linear group of mature horse chestnuts along the eastern boundary.
- A mature offsite blue atlas cedar just beyond the western boundary.
- An offsite group of ash trees just beyond the southern boundary.

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
A	Green: high quality with estimated remaining life expectancy of at least 40 years.
B	Blue: moderate quality with estimated remaining life expectancy of at least 20 years
C	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 tree removal is limited to trees classified as unsuitable for retention in the context of the proposed land use. This means that no significant existing trees must be removed to enable the proposals.

5.1.3 I understand that the existing tarmac driveway to the north-west of the mature horse chestnut trees at the south-eastern boundary of the northern part of the site shall remain unaltered. This is beneficial because it will mean that the greater majority of these trees' RPAs will remain protected by the tarmac hard surface throughout the course of the construction process.

5.1.4 Also, arboricultural input to the design process has seen the build line moved back so that it is outside the RPAs of the horse chestnut trees. In my view this will be beneficial both in terms of limiting direct impacts on the trees' roots, but also to improve and increase daylighting to the occupied dwellings.

5.1.5 Some localised facilitation pruning may be required to crown lift the lower branch tips of the chestnut trees over the access road in order to achieve suitable height clearance. This will not be detrimental to the appearance of the trees or their health and condition.

5.1.6 Tree protection barriers will be needed to protect the trunks of the horse chestnut trees and also the offsite cedar tree to the north-west.

5.1.7 New tree planting is also indicatively shown on the proposed layout drawing. If successfully established these new trees will provide exponential benefit as the grow and mature within the developed site. In my opinion, the effects of the new tree planting will accrue to form a positive arboricultural impact.

5.1.8 Overall, in my view, the development can be achieved without substantive harm to retained trees and the wider arboricultural character of the area.

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 are provided.

5.2.3 Tree protection barriers 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 can be put in place to ensure that construction works do not result in damage to the retained trees.
- New tree planting can be carried out that will enhance the arboricultural qualities of the site into the future.

APPENDIX 1 –TREE SURVEY SCHEDULE

TREES

Ref	Common name	Height (m)	Est	Stem dia (mm)	Est	N	Est	E	Est	S	Est	W	Est	Estimated first branch height (m)	1st branch direction	Estimated canopy height (m)	Life stage	Special status	General observations & management recommendations	Struct. cond.	Phys. cond.	ULE	Quality grading	RPA radius (m)	RPA area (m2)	Protected status
T1	Horse chestnut	20	-	1220	-	7	-	8	#	8	-	9	-	3	SE	3	M	None	Prominent roadside tree. End tree of a group of five even aged horse chestnut. Linear cavity on underside of branch at 7m height in central northern crown. Previously topped with substantial regeneration. Follow up crown reduction now appropriate. Recommend 20% volume crown reduction.	Fair	Good	20+	B1	15	673	None
T2	Horse chestnut	19	#	700	-	5	-	6	#	6.5	-	9	-	3	W	2.5	M	None	A smaller tree within the group. Previously crown reduced with substantial regeneration. Follow up crown reduction now appropriate. recommend crown reduction by 20% volume.	Fair	Good	20+	B1	8	222	None
T3	Horse chestnut	16	#	600	-	4.5	-	5	#	5	-	7	-	4	W	2.5	M	None	A smaller tree within the group. Previously crown reduced with substantial regeneration. Follow up crown reduction now appropriate. recommend crown reduction by 20% volume.	Fair	Good	20+	B1	7	163	None
T4	Horse chestnut	21	#	810	-	7	-	8	#	8	-	9	-	3	W	3	M	None	A larger tree within the group. Previously crown reduced with substantial regeneration. Follow up crown reduction now appropriate. recommend crown reduction by 20% volume.	Fair	Good	20+	B1	10	297	None
T5	Horse chestnut	20	#	850	-	9	-	8	#	7	-	7	-	3	W	3	M	None	End tree of a group of five even aged horse chestnut. Previously topped with substantial regeneration. Follow up crown reduction now appropriate. Recommend 20% volume crown reduction.	Fair	Good	20+	B1	10	327	None
T6	Horse chestnut	20	#	850	#	6	#	6	#	5	#	5	#	3	S	3	M	None	Offsite tree with slight crown overhang into site.	Good	Good	20+	B1	10	327	None
T7	Deodar cedar	6	#	250	#	4	#	3	#	2	#	2	#	2	S	2	EM	None	Previously topped, A low quality tree due to impeded form . Also inappropriate species for the setting.	Fair	Good	10+	C1	3	28	None
T8	London plane	14	#	350	#	6	#	6	#	7	#	7	#	3	S	2	EM	None	Offsite tree with considerable scope for future growth.	Good	Good	20+	B1	4	55	None

Ref	Common name	Height (m)	Est	Stem dia (mm)	Est	N	Est	E	Est	S	Est	W	Est	Estimated first branch height (m)	1st branch direction	Estimated canopy height (m)	Life stage	Special status	General observations & management recommendations	Struct. cond.	Phys. cond.	ULE	Quality grading	RPA radius (m)	RPA area (m2)	Protected status
T9	Goat willow	9	#	350	#	5	#	7	#	6	#	6	#	1	N	2	EM	None	Self-set tree on terrace bank. Recommend remove tree and stump.	Fair	Good	<10	U	4	55	None
T10	Blue atlas cedar	19	#	750	#	7	#	8	#	8	#	7	#	2	S	3	M	None	Offsite tree. Prominent in streetscene.	Good	Good	20+	B1	9	254	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	Common ash, sycamore	550	20-15	17	2	M	None	Offsite tree group with crown overhang into sire previously reduced back to the boundary	Good	Good	20+	B2	As shown on plan	None
G2	Ash, cherry laurel	80	7-6	6.5	2	SM	None	Self-set trees. Possibly spanning boundary. Recommend remove- if necessary in consultation with neighbours.	Poor	Good	<10	U	As shown on plan	None
G3	Goat willow, sycamore, crab apple	250	8-6	7	1	EM	None	Self-set trees on terraced bank. Recommend remove trees and stumps.	Poor	Good	<10	U	As shown on plan	None

HEDGEROWS

Ref	Common names of woody species present	Estimated minimum & maximum heights (m)	Estimated average height (m)	Estimated average trunk diameter (mm)	Estimated average lateral spread (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)
H1	Leyland Cypress	3	3	80	1.5	0	EM	None	Offsite domestic hedge. Topped and trimmed to maintain form.	Good	Good	20+	B2	As shown on plan
H2	Sycamore, privet, elder, cherry laurel, Leyland cypress	8-6	7	150	4	0.5	EM	None	Offsite hedge at top of low retaining wall. Relatively unmanaged. Recommend cutting overhang back to boundary. Not liaise with hedge owner beforehand. All arising remain property of the hedge owner and must be offered back.	Fair	Good	10+	C2	As shown on plan

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.
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	• None • Veteran: any tree judged to meet criteria as defined by the Ancient Tree Forum • Ancient: any tree judged to meet criteria as defined by the Ancient Tree Forum[1]
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	• Good: without any observable significant biomechnical structural weaknesses • Fair: with minor biomechanical structural flaws. Some remedial action may be required • Poor:with significant biomechanical weaknesses requiring intervention particularly where risk management is required.
Physiological condition	• Good: no indications of impaired physiological function and in optimum condition for age and species • Fair: with indicators of reduced vitality. Some intervention may be required • Poor: with significantly impaired physiological function for age and species
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 (m^2). The area of the RPA radius circle described above. Applies only to individual trees.

[1] 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

Key

- Vegetation to be removed / area pruned
- Proposed tree planting
- Tree protection fencing (see Protective Barrier detail)
- Signage 'Construction exclusion zone - No Access'
- Visibility splay
- CEZ — Construction Exclusion Zone

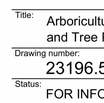
Quality and Suitability For Retention

- Category A - High quality and value (Highly desirable for retention)
- Category B - Moderate quality and value (Desirable for retention)
- Category C - Low quality and value (Optional for retention)
- Category U - Poor quality and value (Unsuitable for retention)

Root Protection Areas (RPA)

Root Protections Areas (RPA) indetified are in accordance with BS5837:2012. RPA's are shown as a pink dashed polyline

Tree Key



Group / Area / Woodland / Hedgerow Key

Protective Barrier

Heras panels (or equivalent) fixed in position as indicated with ground pins

A) stabiliser strut with base plate secured with ground pins

Scale

0 1 2 3 5 10 20 40

Tree Survey Summary

Tree number on plan	Common name	Quality grading	RPA radius (m)	Protected status
T1	Horse chestnut	B1	15	None
T2	Horse chestnut	B1	8	None
T3	Horse chestnut	B1	7	None
T4	Horse chestnut	B1	10	None
T5	Horse chestnut	B1	10	None
T6	Horse chestnut	B1	10	None
T7	Deodar cedar	C1	3	None
T8	London plane	B1	4	None
T9	Goat willow	U	4	None
T10	Blue atlas cedar	B1	9	None
G1	Common ash, sycamore	B2	As shown on plan	None
G2	Ash, cherry laurel	U	As shown on plan	None
G3	Goat willow, sycamore, crab apple	U	As shown on plan	None
H1	Leyland Cypress	B2	As shown on plan	None
H2	Sycamore, privet, elder, cherry laurel, Leyland cypress	C2	As shown on plan	None

Notes

1) Survey Date August 2023.

2) Owing to limitations of topographical survey, some tree/group locations are approximate.

3) This drawing has been produced to be printed in colour. If you have been given this drawing in monochrome please request a colour version.

4) Do not scale directly from this drawing.

5) This drawing is to be read in conjunction with all other relevant MHP drawings and information supplied by other consultants.

Rev		Date	Drawn	Checked
A	New layout with minor barrier change	07-03-24	GW	MR

Revisions:

Project: Bristol Street Motors, London Road, Stroud

Client: Piper Land Development Ltd

Title: Arboricultural Impact Assessment and Tree Protection Plan

Drawing number: 23196.502 Rev: A

Status: FOR INFORMATION

Drawn By:	Checked By:	Date:	Scale @ A1:
GW	MR	08-02-24	1:200

Bristol Street Motors, London Road

Arb Impacts & Tree Protection Plan

N

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