



Arboricultural Impact Assessment and Method Statement for: Coppice Dell

Inspected and prepared by

Stuart Roberts
DipArb(RFS), MICFor, RCArbor A

Prepared for

Mr and Mrs Lowrie

Report date

9th September 2022

Site address

Coppice Dell
Church Lane
Limpley Stoke
Bath
BA2 7GH

Report reference

CoppiceDell_AMS_092022

Project

Construction of
dwelling in existing
garden.

Executive summary

This Arboricultural Impact Assessment and Method Statement has been prepared to provide Wiltshire Council with arboricultural information in support of a planning application for development proposals at Coppice Dell on Church Lane in Limpley Stoke.

The information within is compliant with *BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations* and contains details of the direct and indirect impacts of the proposals on the trees on and adjacent to the site along with details of impact mitigation and proposed tree protection measures.

The proposal is for the demolition of an existing garage and for the construction of a new dwelling in the same location along with a new shared access and driveway.

The removals allow for the retention and protection of the principal and high value trees on the site. Five trees and two small tree groups are proposed for removal to facilitate the proposals which will have a minor impact on public visual amenity.

Mitigation for the tree removals will be delivered through the planting of new trees on site as part of landscape works.

A new access is proposed leading to new driveways to the south and west of the site which will encroach on the root protection areas (**RPAs**) of several retained trees. To prevent root damage the driveway sections within RPA will be a NO DIG construction directly onto existing ground level using a 150mm deep Cellular Confinement Ground Protection System, surfaced with a porous wearing course.

The proposals do not require any other encroachments into the RPA of a retained tree.

Robust physical barriers will be used to prevent construction access to areas vulnerable to ground compaction and prevent contact damage to the above ground parts of retained trees.

The site does not lie within the limits of a Conservation Area and that there are no trees on or adjacent to the site that are the subject of a Tree Preservation Order (**TPO**).

Paragraph number	Content	Page number
N/a	Executive summary.....	1
N/a	Contents.....	2
1.0	Instructions.....	3
2.0	Introduction.....	3-4
3.0	Report limitations.....	4
4.0	Trees included in the survey.....	4
5.0	Root Protection Areas RPAs.....	5
6.0	Statutory constraints.....	5
7.0	Soil.....	5
8.0	Site images.....	6-7
9.0	Arboricultural Impact Assessment	8
10.0	Tree removals and arboricultural works.....	8
11.0	Mitigation for tree losses.....	8
12.0	Potential below ground impacts.....	8
13.0	Site specific impacts.....	9
14.0	Arboricultural Method Statement	10
15.0	Arboricultural works.....	10
16.0	Tree protection.....	10-11
17.0	Works within root protection areas.....	11-12
18.0	Additional precautions outside of the CEZ.....	12
19.0	Access for construction works.....	12
20.0	Supervision and monitoring.....	12
21.0	Contingency plans.....	13
22.0	Programme of works.....	13
Appendices		
A	Tree survey schedule and key	
B	Tree Protection Plan and Tree Constraints Plan	
C	Tree survey methodology	
D	Protective fencing specification	
E	Example tree protection warning sign	

1.0 Instructions

- 1.1 Assured Trees are instructed by Mr and Mrs Lowrie to carry out a tree survey at Coppice Dell and prepare an arboricultural report in support of a planning application to Wiltshire Council for development proposals on the site.
- 1.2 This report has been prepared by a qualified arboriculturalist in accordance with *BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations* (**BS5837: 2012** hereafter) and contains the components listed in Table 1:

Component	Description
Tree survey	Including all trees, on and off site, that could potentially be impacted by the proposals.
Arboricultural Impact Assessment (AIA)	Containing details of the potential impacts of development proposals on trees on and adjacent to the site.
Arboricultural Method Statement (AMS)	Containing a clear specification for protective measures for retained trees throughout the development process.
Tree Protection Plan (TPP)	Clearly illustrating the extent and location of specified tree protection measures.
Tree work schedule	Containing details of trees to be removed and any proposed tree works.

Table 1: Report components

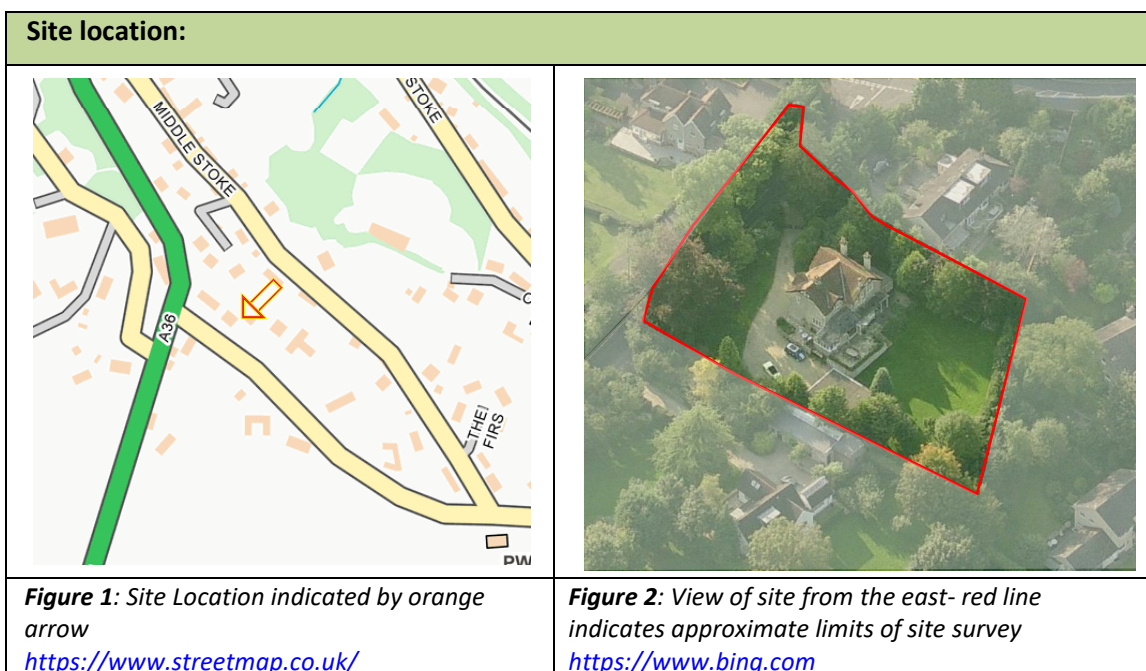
- 1.3 This report has been informed by the following documents:

Document	Reference	Supplied by
Existing site plan	2028-S 002	Enspace Architects
Proposed site plan	21035-2100-P Rev C	Enspace Architects

Table 2: Documents provided

2.0 Introduction

- 2.1 The site is comprised of a detached residential property, accessed from a driveway entrance from Church Lane to the south-west of the site, leading past the south elevation of the house to a detached garage on the east site boundary. The house is surrounded by a substantial garden with trees and hedges around the periphery.
- 2.2 The proposal is for the demolition of the existing garage and for the construction of a new dwelling in the same location along with a new shared access and driveway.



3.0 Report limitations

- 3.1 The tree survey was carried out from ground level on the 13th June 2022, observations were made in the context of planning and development in accordance with BS5837:2012 and specifically relate to the conditions found at the time of the survey. The survey does not constitute a detailed hazard assessment, no decay detection equipment has been used in assessing trunk condition and no samples of any kind have been taken for analysis.

4.0 Trees included in the survey

- 4.1 Fourteen trees, three tree groups and two hedges were identified in the survey and have been awarded category ratings in accordance with the BS5837:2012 cascade chart for tree quality assessment (table 1), a rating of **A**, **B**, **C** or **U** is allocated based on the condition of a tree or group of trees in its/their current surroundings, with **A** representing the higher quality trees, **B** the moderate quality, **C** the lower quality and **U** the trees that should be removed for arboricultural reasons. A full account of the tree survey methodology including the categorisation criteria for surveyed trees is presented at appendix C.

	BS5837:2012 Category rating			
	A	B	C	U
Trees	0	2	12	0
Groups	0	0	3	0
Hedges	0	0	2	0

Table 3: Tree categorisation quantities

5.0 Root Protection Areas

- 5.1 Below ground constraints or Root Protection Areas (**RPAs**) for all trees on site have been calculated in accordance with BS5837:2012. The RPA is not an indication of the extent of the entire root system of the tree, roots may extend significantly beyond the calculated RPA. The RPA is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree's viability. Within the RPA the protection of the roots and soil structure should be treated as a priority. The RPAs have been plotted onto the Tree Protection Plan as a circle centred on the base of each tree stem with a radius of 12 times the trees stem diameter measured at 1.5 metres above ground level.
- 5.2 BS5837:2012 requires that where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically the RPA should be modified to produce a polygon of an equivalent area. Table 4 contains details of all trees on site for which the RPA has been modified.

Tree No.	Species	RPA Radius	Reason for modification
T12	Laburnum	3.1m	The trees are growing between structures with substantial foundations that will have prevented root growth below, RPAs have been amended away from the structures accordingly.
T13	Goat willow	1.1m	
T14	Ash	4.0m	

Table 4: Root protection area modifications

6.0 Statutory constraints

- 6.1 A review of Wiltshire Council on-line resources¹ reveals that the site does not lie within the limits of a Conservation Area and that there are no trees on or adjacent to the site that are the subject of a Tree Preservation Orders (**TPO**). It is not currently necessary to obtain consent from Wiltshire Council to carry out tree works on the site.

7.0 Soils

- 7.1 Tree growth can cause differential movement in structures on shrinkable clay soils as moisture is removed from the soil during the growing season. Soil information obtained using the British Geological Survey Data² indicates the underlying soil at the site to be a *Chalfield Oolite Formation – Limestone* and does not indicate there is a clay soil at the site with a high potential for volume change however as there is potential for uncharted localised deposits of clay, soil type should be confirmed by a suitably qualified engineer and foundations near trees should be constructed in accordance with *National House Building Council (NHBC) Chapter 4.2 Building near trees*³.

¹<https://wiltscouncil.maps.arcgis.com/apps/webappviewer/index.html?id=74a353612a934bd48fee1f2bc564cdd8>

²<https://geologyviewer.bgs.ac.uk/>

³<https://nhbc-standards.co.uk/4-foundations/4-2-building-near-trees/>

8.0 Site images

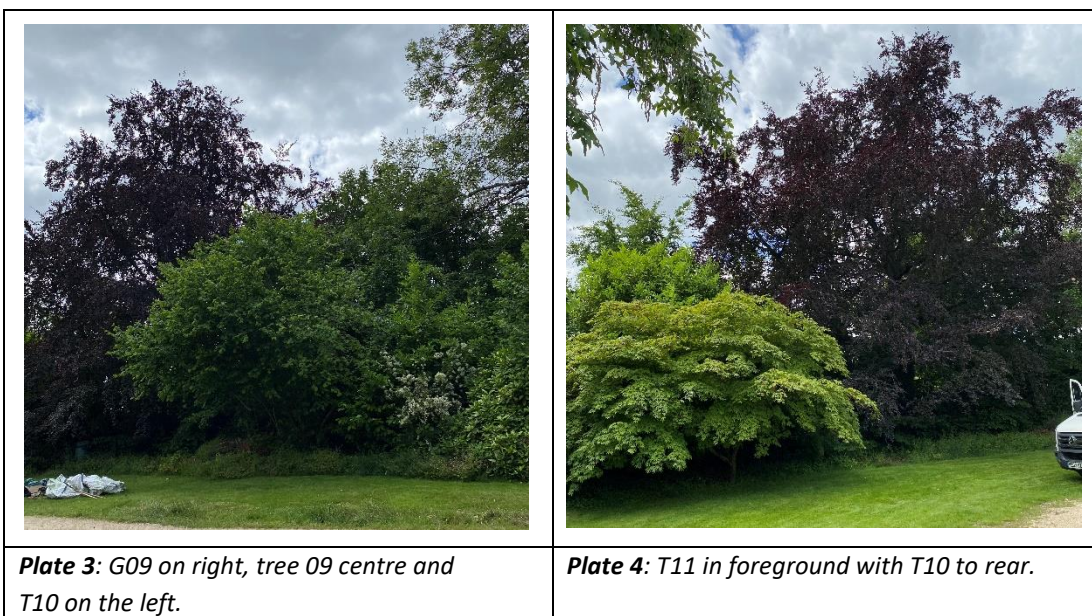




Plate 5: Trees 12, 13 and 14 to side of existing garage with trees 16 and 17 in background.



Plate 6: Trees 13 and 14 on site boundary.



Plate 7: Existing driveway within the RPA of T10.



Plate 8: Tree 15 in foreground with trees 16 and 17 centre background with hedges 18 on right and 19 on left.

9.0 Arboricultural Impact Assessment

10.0 Tree removals and arboricultural works

10.1 **Tree removals:** The proposals have been designed to allow the retention of the principal high value trees on the site. Five trees and two tree groups are proposed for removal to facilitate the proposals, as detailed in table 4.

Number	Species	Stem diameter	Age class	Retention category	Impact on visual amenity
G04	Sycamore, cypress, laurel and yew	180mm	Y	C1	Minor
T06	Western red cedar	180mm	Y	C1	Minor
G08	Yew	250mm	Y	C1	Minor
T12	Laburnum	283mm	M	C1	Minor
T13	Goat willow	90mm	y	C1	Minor
T14	Ash	333mm	Sm	C1	Minor
T15	Apple	70mm	Y	C1	Minor

Table 5: Trees proposed for removal.

10.2 All of the removals are small trees with limited visibility from outside of the site. As mature trees on the site boundary will be retained the losses will have a minor impact on public visual amenity.

11.0 Mitigation for tree losses

11.1 Mitigation for the tree removals will be delivered through the planting of several new trees on the site as part of landscaping works. Tree planting plan including location, species, planting stock size and aftercare regime to be submitted separately to this report for approval.

12.0 Potential below ground impacts

12.1 **General impacts:** The most common below ground impact in a development scenario arises from the compaction of soil within the rooting area of a tree. Soil compaction prevents water ingress, creates poor drainage and reduces the availability of oxygen to roots resulting in impaired root growth or even root death. Soil compaction can arise through vehicle movements or through the storage of heavy materials on vulnerable ground such as grass.

12.2 Further below ground impacts arise through the severance of roots in order to construct foundations, install services or alter ground levels. In order to avoid compaction and/or root severance construction activity must be excluded from the RPA of retained trees through the use of robust physical barriers erected at the extent of the RPA to create a Construction Exclusion Zone (**CEZ**). If construction access is required within the RPA, barriers need to be set back and ground protection used in order to prevent soil compaction. Existing hard surfacing such as tarmac can be used as ground protection.

13.0 Site specific impacts

- 13.1 **Driveway work:** It is proposed to create a new access onto Church Lane, to widen the existing driveway to the south-east within the RPA of T10 that is currently soft landscape and to create a new section of driveway to the west of the site within the RPA of trees 01-06 which is currently soft landscape. Constructing the driveway using conventional methods on areas of soft landscape within RPAs will cause ground compaction and root damage, which will adversely impact retained trees. To prevent ground compaction the driveway sections within RPA must be a NO DIG construction using a permanent ground protection system, similar to Cellweb⁴ surfaced with a porous wearing course that prevents ground compaction, allows gaseous exchange from the underlying soil and allows water penetration to the underlying soil.
- 13.2 There is potential for construction plant and machinery to cause contact damage to the above ground parts of retained trees adjacent to the proposed driveway. There is also potential for construction activity to cause ground compaction in areas of soft landscape within the RPA of trees surrounding the rear garden. To prevent direct contact damage and prevent access to RPAs that are vulnerable to compaction robust physical barriers must be erected to create Construction Exclusion Zones. The barriers must be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees.
- 13.3 **Shading and leaf fall:** Tree 10 will cast shade over the driveway and south elevation of the proposed house and will drop significant quantities of leaf litter over the driveway in the autumn resulting in a minor maintenance issue.

⁴ <http://www.geosyn.co.uk/product/cellweb-tree-root-protection>

14.0 Arboricultural method statement

14.1 This arboricultural method statement (**AMS**) provides details and specifications for all tree protection measures and arboricultural related operations for the duration of the development process. Copies of this AMS must be kept on site and the site manager must communicate the content to all staff and contractors with duties that involve working near trees or have the potential to impact retained trees.

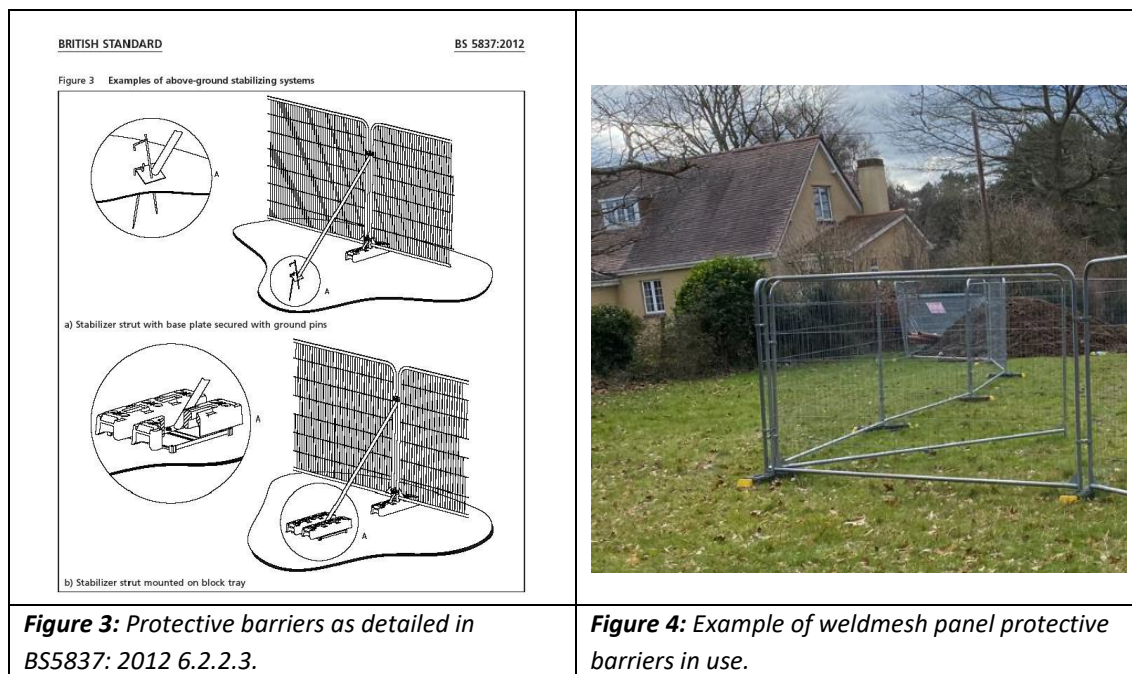
15.0 Arboricultural works

15.1 Trees in G04, T06, G08, T12, T13, T14 and T15 will be removed, tree works will be carried out in accordance with *BS3998:2010 Tree work Recommendations*. Following the removals there will be no requirement for further pruning works to facilitate the proposals.

16.0 Tree protection

16.1 **Barriers:** Following tree works and before the commencement of any demolition or construction works on site, temporary protective barriers will be installed in the positions shown on the Tree Protection Plan.

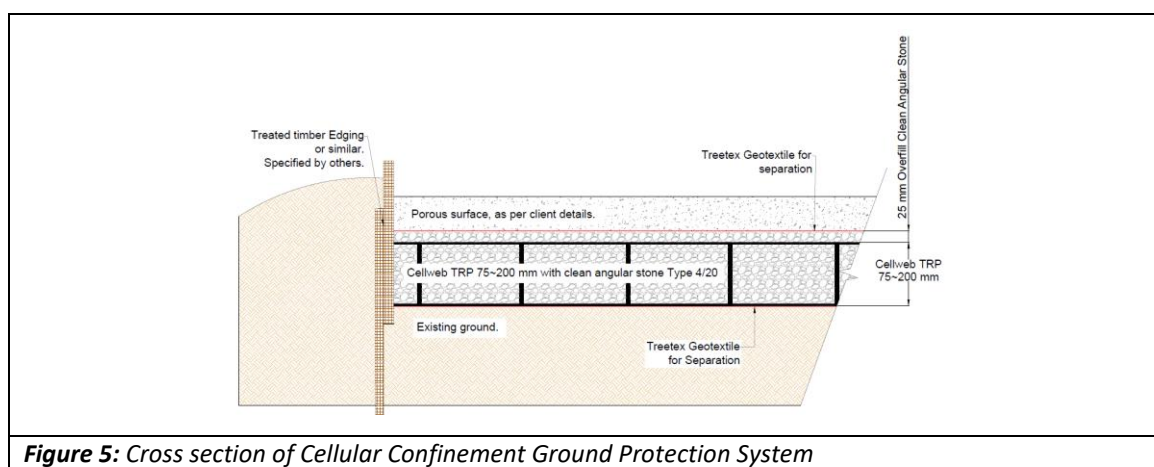
16.2 The barriers will consist of 2 metre tall, welded mesh panels on rubber feet, joined with a minimum of 2 anti-tamper couplers at least 1 metre apart and must be well braced to resist impact (see figure 3-4 and Appendix D).



- 16.3 The protective barriers will create a Construction Exclusion Zone (CEZ) in order to prevent construction activity of any kind, including the storage of materials, within the unprotected RPA of T01. The barriers will remain in place until the completion of all development and hard landscape works. **The barriers must not be moved or altered in any way without the written consent of Wiltshire Council.** If site constraints require the alteration of the barriers then the project arboriculturalist must first be consulted who will take the necessary steps to obtain appropriate consent.
- 16.4 All weather protective barrier site notices, similar to that reproduced below in Appendix E will be attached to the protective barriers to clearly identify the purpose as tree protection that must not be moved or altered.

17.0 Works within root protection areas

- 17.1 **Driveway works:** The new driveway will encroach on the RPA of trees 01-05 on the west site boundary and trees 09 and 10 on the south site boundary. The driveway sections within RPA will be a NO DIG construction directly onto existing ground level using a 150mm deep⁵ Cellular Confinement Ground Protection System⁶, which will be installed in the positions shown on the Tree Protection Plan, in strict accordance with the manufacturer's instructions and with *Arboricultural Guidance Note 12 The use of cellular confinement systems near trees: A guide to good practice*⁷.
- 17.2 The system will be laid out by hand, no plant, heavy equipment or machinery will be used laying out the system. The Geotextile cells will then be filled with clean angular stone *Type 4/20* in accordance with the manufacturer's installation guide (figure 5). Machinery used to fill the cells will only track on filled cells and never on the unprotected ground within the RPA. The system will ultimately be surfaced with a porous wearing course.



⁵ Suitable for emergency access and refuse collection applicable up to a 30t gross weight

⁶ <http://www.geosyn.co.uk/product/cellweb-tree-root-protection>

⁷ <https://www.trees.org.uk/News-Blog/Latest-News/New-guide-to-use-of-cellular-confinement-systems-n>

- 17.3 Sections of driveway outside of RPAs can be constructed using conventional methods.
- 17.4 **Services:** No services are required within the RPA of a retained tree. If services are required to run within the RPA of a retained tree for unforeseen reasons, they will be installed in accordance with the National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees - Issue 2: 16th November 2007⁸.
- 17.5 **Soft landscape works:** Following the completion of all construction, surfacing and hard landscape works that require heavy plant and equipment, temporary tree protection barriers will be removed to allow soft landscape works such as planting.

18.0 Additional precautions outside of the construction exclusion zone

- 18.1 Fires will not be lit on site, any materials whose accidental spillage would cause damage to a tree must be stored and handled well away from the outer edge of its RPA, no equipment, machinery, structure, notice boards, telephone cables or other services will be attached to or supported by a retained tree.
- 18.2 Planning of site operations will take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweights (including drilling rigs), in order that they can operate without coming into contact with retained trees. Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity to trees will be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is maintained at all times.

19.0 Access for construction works

- 19.1 Construction traffic will initially enter the site via the existing entrance to the south-west and will use the new entrance once it has been formed. Construction traffic will not require access to the unprotected RPA of a retained tree at any time. Construction compounds, material storage areas, welfare facilities and contractor car parking will be located outside of the RPA of retained trees.

20.0 Supervision and monitoring

- 20.1 Assured Trees Ltd will be responsible for the monitoring of all tree protection measures and compliance with this Arboricultural Method Statement, if instructed to do so a certificate of compliance will be issued to the client for the operations listed in Table 6.

⁸ <http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>

No.	Tree protection operation
1	Erection of tree protection barriers in the position shown on the Tree Protection Plan.
2	Installation of Cellular Confinement Ground Protection System in the position shown on the Tree Protection Plan.
3	Compliance with this arboricultural method statement post construction.

Table 6: Operations for which a certificate of compliance may be produced.

21.0 Contingency plans

21.1 The occurrence of any unforeseen incidents that may adversely impact retained trees must be reported to Assured Trees as soon as practicable following the incident. Assured Trees will then advise on the appropriate course of action and will produce and maintain a record of any such incidents including any subsequent measures taken.

22.0 Programme of works

Development stage	Sequence number	Operation	Details
Pre-development	01	Tree works	Removal of G04, T06, G08, T12, T13, T14 and T15.
	02	Installation of tree protection	- Installation of temporary tree protection barriers in the positions shown on the Tree Protection Plan. - Installation of Cellular Confinement Ground Protection System in the positions shown on the Tree Protection Plan.
During development	03	Main construction phase	- Demolition of existing garage and construction of new house with no access to RPAs. - Formation of new site entrance. - Surfacing of Cellular Confinement Ground Protection System with porous wearing course.
Post - construction	04	Removal of tree protection	Removal of temporary protective barriers following completion of all construction, resurfacing and hard landscape works.
	05	Soft landscape works	Including all tree and shrub planting without the use of heavy plant or machinery within the RPA of retained trees.

Table 7: Programme of works

Appendix A: Tree Survey Schedule

Tree Survey Schedule	
Client: Mr and Mrs Lowrie	
Location: Coppice Dell, Church Lane, Limpley Stoke, Bath, BA2 7GH.	
Surveyor: Stuart Roberts	
Date of Survey: 13 th June 2022	

Tree Number	Single (S) or Hedge (H)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	North (m)	South (m)	East (m)	West (m)	Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
01	S	Species	16	550	1	4	3	3	3	3	M	G	F	Single stem spruce to north-west of site entrance, top removed at 16 metres, major dead wood (over 50mm diameter), climbing plant established in lower crown.	None.	20+	C2	6.6
02	S	Lawson cypress	10	361	2	0	2	2	3	3	Sm	G	G	Off-site twin stem cypress 2 metres from site boundary.	None.	40+	C1	4.3
03	S	Leyland cypress	8	210	1	3	1	3	3	1	Y	F	F	Stem lean and crown bias east, top removed at 8 metres.	None.	40+	C1	2.5
04	G	Sycamore, cypress, laurel and yew	8	180	1	0	See tree constraints plan.				Y	F	F	Dense tree/shrub group dominated by laurel with young cypress, several self-seeded multi stem sycamore and 1 young yew.	Remove to facilitate proposals.	40	C2	
05	S	Lawson cypress	7	400	1	2	2	2	2	2	Sm	G	F	Off-site cypress adjacent north site boundary, top removed at 7 metres.	None.	40+	C1	4.8
06	S	Western red cedar	7	180	2	1	2	1	2	1	Y	F	F	Previously suppressed by adjacent trees recently removed, top removed at 7 metres.	Remove to facilitate proposals.	40+	C1	
07	G	Cypress, ash, walnut and cherry	15	350	1		See tree constraints plan.				Sm	G	F	Dense tree group on the north site boundary, ash on the south side of the group is symptomatic of Ash Dieback Disease.	None.	40+	C2	4.2

Tree Number	Single (S) or Hedge (H)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	North (m)	South (m)	East (m)	West (m)	Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
08	G	Yew	7	250	1	1	1	4	3	3	Y	G	G	Group of 3 small yew on the south side of site entrance, driveway within RPA.	Remove to facilitate proposals.	40+	C1	
09	S	Hazel	7	349	15	0	4	4	4	4	Sm	G	G	Hazel coppice on west site boundary	None.	20+	C1	4.2
10	S	Copper beech	18	1030	1	0	7	7	7	7	M	G	G	Large beech on west site boundary.	None.	40+	B2	12.4
11	S	Japanese maple	4	220	6	0	3	2	4	3	M	G	G	Multi stem maple on north edge of boundary shrub group, good condition.	None.	40+	B1	2.6
12	S	Laburnum	8	283	8	1	1	3	3	5	M	G	G	Large laburnum adjacent site boundary, crown bias west, building within RPA to east.	Remove to facilitate proposals.	20+	C1	
13	S	Goat willow	5	90	1	2	3	1	2	0	Y	F	P	Single stem goat willow adjacent off-site building, crown bias to the north, drawn up slender crown form.	Remove to facilitate proposals.	20+	C1	
14	S	Ash	12	333	3	3	3	2	3	4	Sm	P	F	Triple stem ash between garage and off-site building, symptomatic of Ash Dieback Disease with 25-50% crown dieback.	Remove to facilitate proposals.	<10	C1	
15	S	Apple	3	70	1	2	2	0	1	1	Y	F	F	Small, young apple, dieback in upper crown, crown bias north.	Remove to facilitate proposals.	10+	C1	
16	S	Pear	9	270	1	3	2	2	3	3	M	G	G	Pear on site boundary, suppressed by adjacent ash, crown bias east west.	None.	20+	C1	3.2
17	S	Ash	14	420	2	3	3	3	4	5	Sm	P	P	Ash on site boundary, twin stem from base from a narrow fork, symptomatic of Ash Dieback Disease with 25-50% crown dieback.	None.	<10	C1	5.0
18	H	Hazel, yew and sycamore	2	150	1	0	See tree constraints plan.					G	F	12 metre section of hedge on the south garden boundary, maintained at 2 metres with face trimmed to form.	None.	20+	C2	1.8

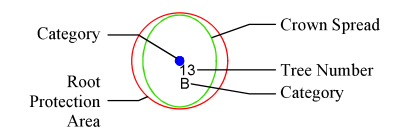
Tree Number	Single (S) or Hedge (H)	Tree Name (species)	Height (m)	Calculated Stem Diameter (mm)	Number of Stems	Crown Clearance (m)	North (m)	South (m)	East (m)	West (m)	Age Class	Physiological Condition	Structural Condition	Condition Notes	Recommendations	Estimated Remaining Life Contribution	BS Category	Root Protection Area (Radius, m)
19	H	Hazel, sycamore, beech and dogwood	2	150	1	0	See tree constraints plan.					G	F	34 metre section of hedgerow on east garden boundary, top and sides maintained to form.	None.	20+	C2	1.8

Table Heading	Definition
Tree Number	Tree numbers as they appear in the Tree Schedule and are marked on the Tree Protection Plan drawings.
Single or group	S for a single tree, G for a group of trees and H for a hedge
Species	The common name of the tree
Height (m)	In meters measured with a laser clinometer
Calculated stem diameter (mm)	Calculated diameter of the stem(s) measured in millimeters at 1.5 meters from ground level # indicates estimated dimensions
Number of stems	Indicates the number of stems measured to inform the Root Protection Area
Crown clearance (m)	Height in metres of crown clearance above adjacent ground level
Crown spread (m)	The spread of the crown measured in metres, taken at the four cardinal points from the trunk
Age class	(Np) Newly planted, (Y) Young, (Sm) Semi-Mature, (Em) Early mature, (M) Mature, (A) Ancient or (V) Veteran
Physiological condition	Good – tree has good health and vitality. Fair- tree has minor health and vitality problems. Poor- tree has low vitality and significant health problems. Dead- dead tree.
Structural condition	G -good P - poor F - Fair D -dead
Condition notes	Specific notes relating to the condition of the tree
Recommendations	Recommendations for tree surgery based on any physical defects found or for further investigation of defects that require a more detailed assessment
Estimated remaining contribution	In years <10, 10+, 20+ or 40+
RPA (Root Protection Area) Radius (m):	The radius of the area in square metres that will need to be protected during construction with a protective fence and/or load bearing surface
Category grading Category	Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years Category C: Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter <150mm Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years
Tree survey schedule key	

Appendix B: Tree Protection Plan and Tree Constraints Plan



Symbol Guide



BS5837:2012 - Tree Category

- | | |
|---|--|
| Category A Trees
High Quality | Category C Trees
Low Quality |
| Category B Trees
Moderate Quality | Category U Trees
Poor Quality/Remove |
| Existing driveway | Proposed drive not
within RPA for
conventional
construction |
| Protective barriers | Tree proposed for
removal |
| Proposed NO DIG driveway within RPA using
ground protection in accordance with AMS | |

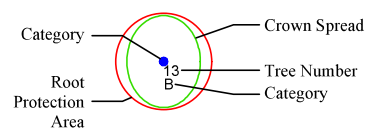


ASSURED TREES

Project Name:	Coppice Dell
Drawing Title:	Tree Protection Plan
Drawing Number:	CD-TPP-01-2022
Client:	-
Agent:	-
Date:	September 2022
Scale:	1:200 @ A2



Symbol Guide



BS5837:2012 - Tree Category

- | | |
|--------------------------------------|---|
| Category A Trees
High Quality | Category C Trees
Low Quality |
| Category B Trees
Moderate Quality | Category U Trees
Poor Quality/Remove |

NOTE: Tree/group numbers marked with an * have approximate locations.



Project Name:	Coppice Dell
Drawing Title:	Tree Constraints Plan
Drawing Number:	CD-TCP-01-2022
Client:	-
Agent:	-
Date:	June 2022
Scale:	1:200 @ A2

Appendix C: Tree survey methodology

Baseline survey

A site visit was undertaken by qualified arboriculturalist Stuart Roberts. The inspection took place from ground level and employed the Visual Tree Assessment method (Mattheck and Breloer, 1994).

Category ratings: In accordance with the BS5837:2012 Cascade chart for tree quality assessment, a rating of A, B, C or U is allocated based on the condition of a tree or group of trees in its/their current surroundings. No consideration is given to any specific development proposal when allocating category ratings, category definitions are detailed below:

Category	Criteria
A	<i>Those trees or groups which have high quality and value, are in good structural and physiological condition and are expected to have a useful life expectancy of at least another 40 years- indicated in green on the associated plans</i>
B	<i>Those trees or groups which would be considered as category A trees but which are of lower value, poorer structural condition, or which are expected to have a useful life expectancy of a minimum of 20 years- indicated in blue on the associated plans</i>
C	<i>Those trees or groups which are of low quality and value, trees currently in adequate condition to remain until new planting is established or are young trees with a stem diameter less than 150mm. Category C trees are expected to have a life expectancy of a minimum of 10 years- indicated in grey on the associated plans</i>
U	<i>Trees or groups in such a condition that any existing value would be lost within ten years and which should, in the current context, be removed for reasons of sound arboricultural management- indicated in red on the associated plans</i>

BS5837:2012 Tree categorisation criteria

Sub categories are awarded in accordance with the following criteria:

Sub category	Inclusion criteria
1	<i>Trees with arboricultural value</i>
2	<i>Trees with landscape value</i>
3	<i>Trees with cultural or conservation (ecological) value</i>

BS5837:2012 Tree sub-category criteria

Root protection areas

Below ground constraints or Root Protection Areas (**RPAs**) for all trees included in the site survey are calculated in accordance with *BS5837:2012 4.6.1*. The RPA is 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 RPAs have been plotted onto the Tree Constraints Plan and Tree Protection Plan as a circle centred on the base of each tree stem with a radius of 12 times the trees stem diameter measured at 1.5 metres above ground level.

BS5837:2012 4.6.2 requires that where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically the RPA should be modified to produce a polygon of an equivalent area. Any trees on site identified as requiring a modification to their RPA are indicated within the AIA.

Data presentation

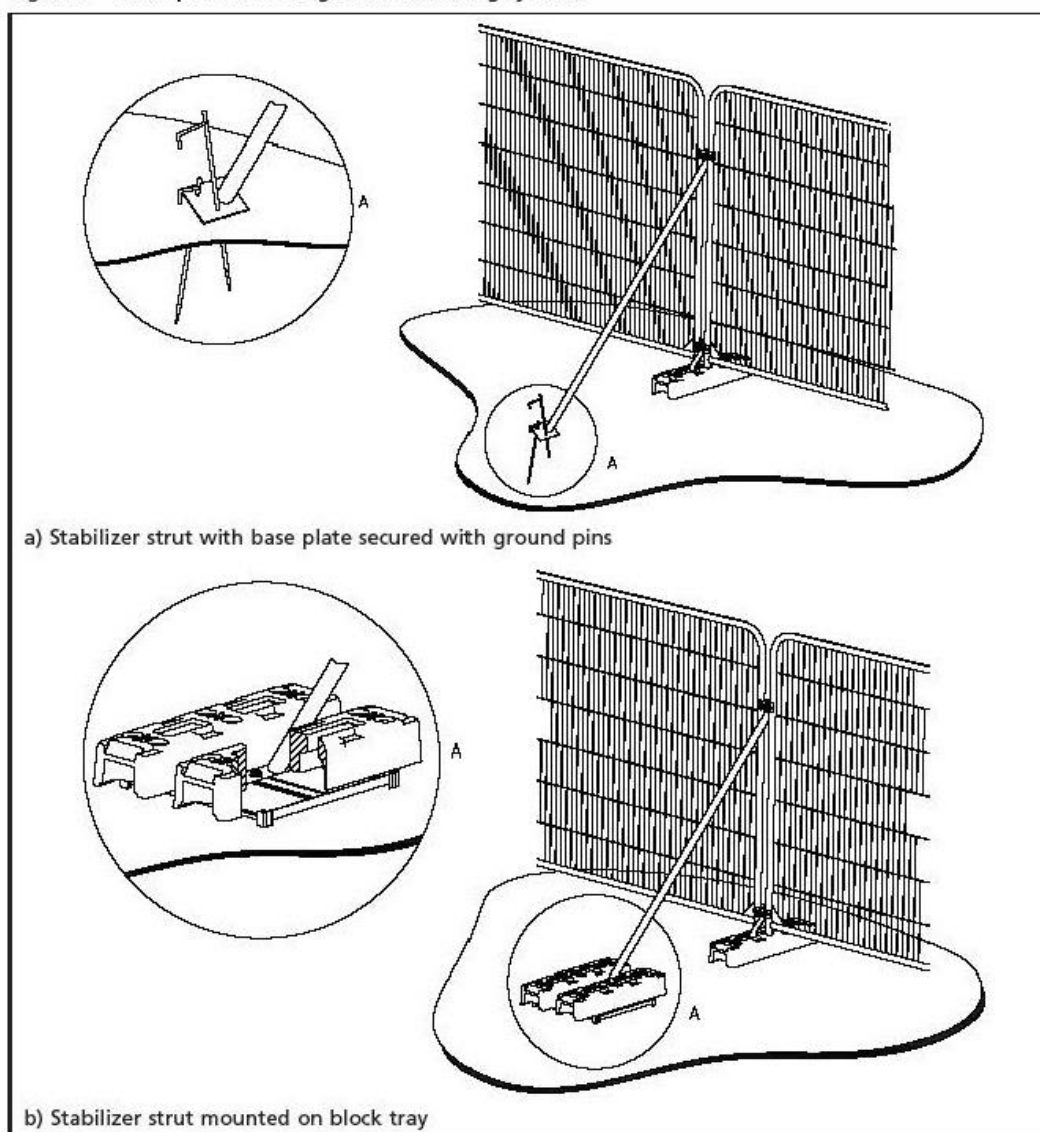
Data collected regarding the individual trees or groups is presented in the Tree Survey Schedule in Appendix A in accordance with *BS5837: 2012*. Trees have not been physically tagged but have been assigned individual numbers that are used to identify a tree, group or hedgerow throughout the report, within the Tree Survey Schedule and on the associated plans.

The following information has been collected for each tree in the survey:

- Tree or group number
- Single or group category
- Common and scientific name of species
- Height in metres
- Number of stems
- Stem diameter
- Clearance of crown from ground level in metres
- Radius of crown
- Age class
- Physiological condition
- Estimated remaining contribution in years
- Structural condition
- Preliminary management recommendations
- Tree categorisation
- **Root Protection Area (RPA)**

Appendix D: Protective fencing specification

Figure 3 Examples of above-ground stabilizing systems



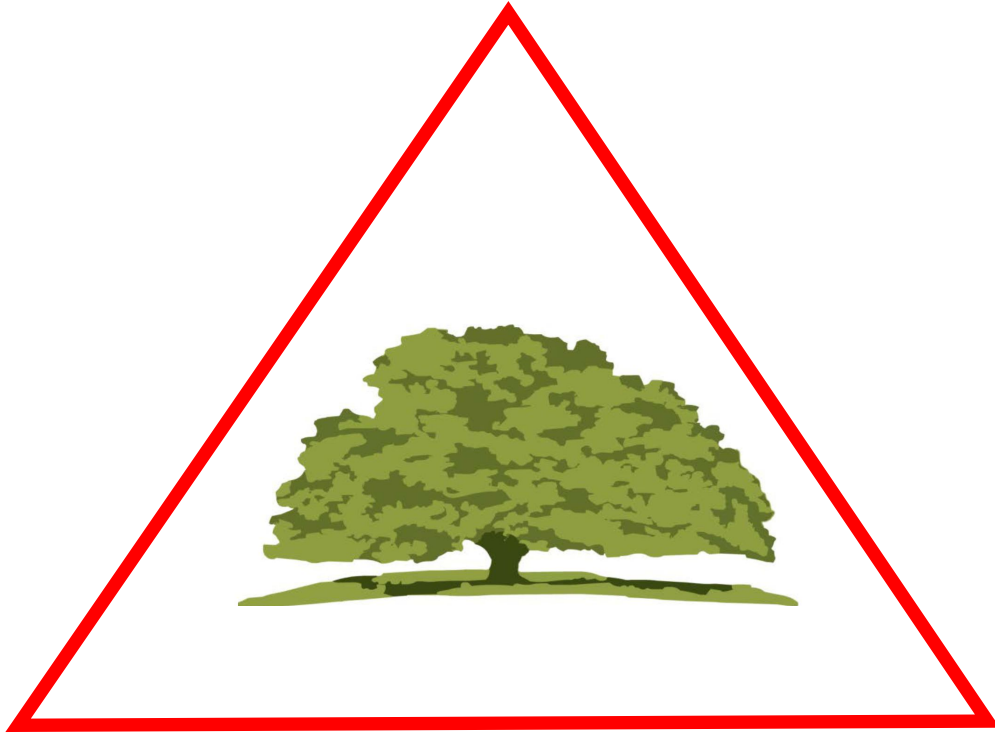
Barriers must be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s).

Barriers shall consist of 2 metre tall, welded mesh panels on rubber feet joined with a minimum of 2 anti-tamper couplers so that they can only be removed from the inside (tree side) of the fence, be at least 1 metre apart and be uniform throughout the fence. The panels must be supported on the inside by stabiliser struts secured with ground pins or where this is not feasible mounted on a block tray (figure b).

Appendix E: Example tree protection warning sign

TREE PROTECTION

No access past this point for construction activity



**TREES ENCLOSED BY THESE BARRIERS ARE LEGALLY
PROTECTED BY PLANNING CONDITION**

**THIS BARRIER MUST NOT BE MOVED OR ALTERED
WITHOUT THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY**

**DO NOT ACCESS OR STORE MATERIALS IN THE AREA
BEHIND THIS BARRIER**