

Arboricultural Impact Assessment and Tree Protection Plan

for trees at

Stourhead Energy Upgrade Project

On behalf of

The National Trust

Stourton
Near Mere
Warminster
BA12 6QD

Inspected and prepared by

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SUMMARY

This Arboricultural Impact Assessment report supports an outline planning application, submitted by The National Trust, for new air source heat pumps at Stourhead in Wiltshire.

Arboricultural advice was taken early in the planning process with the aim of incorporating the best trees on the site. To construct the proposed development one tree must be removed, this is a small C-grade tree not visible from the road or car park and its loss will not have a significant impact on the character or appearance of the local area.

During construction, temporary fencing will be used to protect retained trees situated near works areas. For effective tree protection, fencing must be installed before any heavy plant machinery is used on the site and must remain in place until the construction works have been completed.

Supervision by a suitably qualified arboriculturist will be required in the event of any unforeseen construction activity within the root protection area of retained trees at or near the development site. It is advised to inform the project arboriculturist and the local authority's arboricultural officer of necessary works near trees as soon as they become apparent.

This report details how trees are to be protected during construction works. The site manager must be provided with a copy of this report and it will be their responsibility to impart the information herein to all construction staff.

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1 INTRODUCTION

1.1 Background

- 1.1.1 The National Trust proposes upgrading the energy supply at Stourhead in Stourton, Wiltshire (BA12 6QD). This land is hereafter referred to as the 'site'. This project would involve installing four air-source heat pumps (ASHPs), but only two of these are near trees; these proposals are hereafter referred to as the 'proposed development'.
- 1.1.2 The following documents have been reviewed to inform this report:
- Visitor Reception ASHP General Layout - Redcotec LLP - Drawing # RCT_731_301
 - The Restaurant ASHP General Plan - Redcotec LLP - Drawing # RCT_731_402
- 1.1.3 An initial tree constraints plan was produced in May 2025 and this has informed the design of the proposed site layout.
- 1.1.4 A check of the Wiltshire Council online mapping system confirms that the whole of the site is within a Conservation Area and that none of the trees at the property are protected by a tree preservation order (TPO).

1.2 The assignment

- 1.2.1 Instructed by the National Trust, Bosky Trees conducted a site visit, surveyed the trees that might be affected by the proposed development and specified suitable tree protection measures in the event of a successful planning application. The information compiled in this report is in accordance with the British Standard *BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations*¹.
- 1.2.2 This report includes the following to accompany a planning application for the proposed development:
- A tree survey plan based on the topographical survey provided, with any additional trees indicatively plotted.
 - An arboricultural impact assessment of the proposed development, identifying trees that will be lost, as well as trees that can be retained and protected during development works.
 - A Tree Protection Plan, including information on the location of tree protection fencing and ground protection measures.
 - Recommendations for remedial works for retained trees to be undertaken before site clearance and construction.
 - Method statements for works near trees.

¹ British Standards Institution (2012). *BS5837 Trees in relation to design, demolition and construction – Recommendations*. BSI: London.

1.3 Limitations

- 1.3.1 The assessment and works recommendations relate to conditions found at the time of inspection. Any significant alteration to the site that may affect present trees, or have implications for planning (including level changes, hydrological changes, storms, extreme climatic events or site works) will necessitate re-assessment of the trees.
- 1.3.2 Note that this survey is not a tree safety inspection; it has been carried out to inform the planning process. Where clear and obvious hazards have been observed, these have been addressed in the works recommendations. A full assessment of the risks posed by trees would be informed by consideration of site use together with hazards present within a tree. Changes in site use are likely to occur during, and result from, the proposed development. Given these factors, regular tree risk assessments are advised.
- 1.3.3 This report does not consider tree-related building subsidence. If shrinkable clay soils are present on site, then guidance given in the National House Building Council (NHBC) Standards, chapter 4.2² should be used to avert the risk of future subsidence of new buildings.

2 TREE SURVEY INFORMATION

2.1 Details of the site visit

- 2.1.1 I visited the site and carried out tree survey on 16th May 2025. The survey was not constrained by weather conditions and considered all the trees in and around the expected works areas.
- 2.1.2 The proposed development site is currently an operation visitor centre and restaurant adjacent to the main car park at Stourhead.

2.2 Data collection

- 2.2.1 Trees and tree groups were allocated a unique identifying number, used throughout this report. ID numbers are listed in the tree schedule and are used on the tree plans.
- 2.2.2 Trees were inspected at ground level using the visual tree assessment method.³ As described in table 1 of BS5837,⁴ each tree was placed into one of four retention categories: A, B, C or U. Stem diameter was used to calculate the root protection area (RPA)⁵ required by each tree during construction. Information on each tree and tree-group is given in Appendix 1.
- 2.2.3 A total of 11 individual trees and four groups of trees were surveyed (see table 1).

² National House Building Council (2008). *NHBC Standards Chapter 4.2 - Building near trees*. NHBC: Milton Keynes.

³ Mattheck, C. and Breloer, H. (1995). *The body language of trees: a handbook for failure analysis*. Research for Amenity Trees 4. HMSO: London.

⁴ British Standards Institution (2012). *BS5837 Trees in relation to design, demolition and construction – Recommendations*. BSI: London.

⁵ The root protection area (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 roots and soil structure is treated as a priority.

Table 1: Summary of the retentive worth of trees, groups and hedges included in the survey.

BS5837 Category	Quality	Number of trees	Number of groups
A	High	-	2
B	Moderate	7	-
C	Low	3	2
U	Very poor	1	-
	Total	11	4

2.3 The tree plans

- 2.3.1 The Tree Removal Plan (TR-1) shows the root protection areas required by each tree and identifies which trees are to be removed to enable the proposed development (this is provided as Appendix 3). The Tree Protection Plan (TPP-1) shows where fencing and other protection measures are required to safeguard trees during construction (see Appendix 4). These plans are provided at the rear of the report.

3 ARBORICULTURAL IMPLICATIONS AND PROPOSED MITIGATION

3.1 Tree for removal

- 3.1.1 To construct the proposed development one small hawthorn tree must be removed from G4 to allow trenching for the underground ducting to be installed. G4 is a C-grade group and the tree that needs to be removed is on the end of the row.

3.2 New service runs

- 3.2.1 Typical 'open trench' installation of underground services near trees is likely to sever roots; this will harm the tree's physiological condition, provide an opportunity for fungal infection, and could leave them prone to windthrow.
- 3.2.2 If any additional underground services are required it will be necessary for suitable members of the project team, including an arboricultural consultant, to design their routes. An appropriate specification and method statement are required for their installation and guidance provided in Street Works UK: Publications Volume 4⁶ must be followed.

3.3 Comments on Location A

- 3.3.1 Only one unit is proposed to the rear of the visitor centre. This is a small machine that will be installed upon a gravel surface. There will be minimal ground disturbance and I expect that the adjacent tree (T4) will tolerate this impact with little impact on its long-term health or appearance.

⁶ Street Works UK: Publications Volume 4 – *Guidelines for the planning, installation, and maintenance of Utility apparatus in the proximity to Trees*. Issue 3: 2026.

3.4 Comments on Location B

- 3.4.1 The ground to the rear of the café is already surfaced and used as a storage yard (see figure 1), and the location on the new ASHPs is where there was until recently an underground LPG tank. Since there are favourable rooting conditions in all other directions I expect that the trees in G3 are likely to be rooting elsewhere.



Figure 1: The existing surfacing and storage units to the rear of the café.

3.5 Tree protection fencing

- 3.5.1 Temporary fencing and/or barriers must be used during construction to protect retained trees situated near works areas. The locations of such fencing/barriers is indicated on Tree Protection Plan at the rear of the report (TPP-1). For effective tree protection, protective fencing must be installed before any heavy plant machinery is used on the site and must remain in place until completion of construction works (unless under arboricultural supervision). The fenced off area will be designated as a 'construction exclusion zones'.
- 3.5.2 A specification for suitable tree protection fencing is provided in Appendix 2.

3.6 General method statement for effective tree protection

- 3.6.1 Trees are vulnerable to root damage caused by ground disturbance, direct injury of the trunk or branches, environmental change, pests and diseases. Construction work often exerts pressures on existing trees. A tree that has taken many decades to reach maturity can be irreparably damaged in just a few minutes by unwitting or negligent actions.

- 3.6.2 The site manager must be informed of the tree protection requirements at the site and the guidance in this report. A pre-start meeting is strongly encouraged to ensure correct erection of temporary barriers forming construction exclusion zones to protect retained trees at the site (see also: Section 3.6).
- 3.6.3 Soil compaction can occur quickly by vehicles passing over an area of soil. Compaction may cause reduced infiltration rates of water, poor drainage, reduced availability of water and reduced air and oxygen supply to roots. This leads to reduced root growth and, as a result, the health of the tree is affected. To avoid soil compaction, no vehicles should enter the fenced-off areas during construction operations.
- 3.6.4 All construction staff should be made aware of the following restrictions applying to construction exclusion zone:
- 1) Excavation or raising of soil levels is prohibited within construction exclusion zones without written permission from the project arboriculturist.
 - 2) Site offices and staff welfare facilities must be located outside of construction exclusion zones unless agreed with the local authority's arboricultural officer.
 - 3) No materials of any kind should be stored within the construction exclusion zone.
 - 4) No utility trenches should be routed through a construction exclusion zone without written permission from the local authority's arboricultural officer.
 - 5) Care must be taken when planning site operations to ensure that wide or tall loads, or plants with booms, jibs and counterweights, can operate without coming into contact with retained trees. If necessary, branches may be tied out of the way.
 - 6) Potential contaminants, such as fuel, oils and chemicals, must be stored on an impervious base within a bund able to contain at least 110% of the volume stored. Provision must also be made for any spillage or run-off to be contained away from the protected area.
 - 7) Cement and concrete mixing must take place at least 10m from any trees, over a suitable hard surface to prevent soil contamination from spillage or washing out.
 - 8) Avoid fires; however, if permitted by the site manager, they must not be lit where heat could affect foliage or branches (at least 15 m from the base of a tree is normally sufficient).

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 Evaluation of the proposed development's arboricultural impact

- 4.1.1 The tree that will need to be removed is small and not visible from the road or car park and as such it has low visual amenity value and its loss will not have a significant impact on the character or appearance of the local area.
- 4.1.2 I am satisfied that the locations selected for the new ASHPs are sufficiently far away from adjacent trees to avoid causing them significant damage.
- 4.1.3 Overall, provided that the tree protection measures detailed in this report are followed, I consider that the proposed development can be constructed without causing significant

damage to any of the retained trees. Therefore, I am satisfied that the proposed development will have an acceptable impact on local tree cover.

5 RECOMMENDATIONS

5.1 Tree work

- 5.1.1 All tree works necessary for the proposed development are listed in the schedule in Appendix 1.
- 5.1.2 All permitted and approved tree work must be undertaken in accordance with BS3998:2010 *Recommendations for tree work*,⁷ ideally at the beginning of the construction phase before protective fencing is erected. Only qualified and insured tree surgeons should be employed.

5.2 Legal restrictions to tree works

- 5.2.1 The *Town and Country Planning (Tree Preservation) (England) Regulations 2012*⁸ and the accompanying *Guide to tree preservation procedures* make clear that it is an offence to deliberately destroy a tree subject to a tree preservation order (TPO), or to damage it in a manner that is likely to destroy it, without the permission of the local planning authority. To do so is punishable by an unlimited fine and a replacement tree would normally need to be planted. Trees standing within a conservation area protected in the same way as a tree protected by a tree preservation order.
- 5.2.2 If this report is submitted with a full planning application that is subsequently approved, any tree works listed in this report may be carried out before construction work begins without further permission from the local planning authority. However, since the trees are situated in a conservation area, any arboricultural works taking place before planning permission has been approved must be granted by application for tree works to the local planning authority. Permission for arboricultural works to trees owned by a third party must be sought from and granted by the owner in advance of the works.
- 5.2.3 Works may be constrained between March and August because it is illegal to disturb an active bird's nest. Bat roosts are also protected, so tree works might be delayed if roosting bats are encountered. A tree surgeon or ecologist will advise on this matter.

5.3 Arboricultural supervision

- 5.3.1 Supervision by a suitably qualified arboriculturist is required if any unforeseen construction activity is to take place within the root protection area of any trees retained on or near the site. The project arboriculturist and the local authority's arboricultural officer should be informed of necessary works near trees as soon as they become apparent.

⁷ British Standards Institution (2010). *BS3998 Recommendations for tree work*. BSI: London.

⁸ Town and Country Planning, England. *The town and country planning (tree preservation) (England) regulations 2012*. Town and Country Planning, England: London. Available at: https://www.legislation.gov.uk/uksi/2012/605/pdfs/uksi_20120605_en.pdf.

Appendix 1: Tree Schedule

Site: **Stourhead Energy Upgrade**

Surveyor: **Ben Rose**

Date of Survey: **16th May 2025**



Tree Number	Tree Species	Height (m)	Number of Stems	Stem Ø (cm)	N - Radius (m)	S - Radius (m)	E - Radius (m)	W - Radius (m)	1st Branch (m)	Age Class	Overall Health	ULE (Years)	Tree Structural Condition & Site Notes	Recommended Management	Category
T4	Dogwood	6	1	16	0	3.5	2.5	2.5	2	EM	G	40+	Attractive tree in a prominent location with no obvious significant defects.	No action required at present.	B2
T5	Dogwood	5	MS	12	0.5	3	3	2	3	EM	F	20+	No obvious significant defects.	No action required at present.	C2
T6	Dogwood	3	1	11	2	0.5	3	0.5	1	EM	D	<10	Standing dead tree.	No action required at present.	U
T7	Hawthorn	2	1	16	0.5	4.5	4.5	2	1	EM	F	20+	Ivy clad. Strong lean towards the visitor centre.	No action required at present.	C1
T8	Hornbeam	10	1	49	0	11	5	5	2	M	G	40+	Strong lean towards the visitor centre.	No action required at present.	B1
T9	Holly	5	1	10	0	3	1	1.5	0	SM	G	40+	Small tree surrounded by other shrubs.	No action required at present.	C1
T10	Hawthorn	5	2	21	1	3	3	2	2	M	G	40+	Past crown lift. No obvious significant defects.	No action required at present.	B1
T11	Dogwood	5	MS	21	3.5	4	3	4	1	M	G	40+	Low crown. No obvious significant defects.	No action required at present.	B1
T12	Beech	19	1	47	5.5	4	4	3.5	4	M	G	40+	Situated at the end of a row of similar trees. No obvious significant defects.	No action required at present.	B1
T13	Sycamore	16	1	50	3	7.5	3	4.5	3	M	F	20+	Lean towards the building. No obvious significant defects.	No action required at present.	B1
T14	Sycamore	15	2	42	3	6.5	3	3	3	M	F	20+	Arboreal ivy. Lean towards the building. No obvious significant defects.	No action required at present.	B1

A key explaining each category is provided at the rear of the schedule

Appendix 1: Group Schedule

Site: **Stourhead Energy Upgrade**

Surveyor: **Ben Rose**

Date of Survey: **16th May 2025**



Group Number	Tree Species	Number in Group	Height (m)	Number of stems	Stem Ø (mm)	N - Radius (m)	S - Radius (m)	E - Radius (m)	W - Radius (m)	1st Branch	Age Class	Overall Health	ULE (Years)	Tree Structural Condition & Site Notes	Recommended Management	Category
G1	Dogwood and elder	4	3	MS	8	3	3	3	3	1	EM	G	40+	Small trees behind the toilet block.	Cut back to facilitate access.	C1
G2	Broadleaf woodland	40+	20	1	55	5	5	5	5	3	M	G	40+	Woodland up to the brow of the hill.	No action required at present.	A2
G3	Beech and oak	7	19	1	50	4	4	4	4	3	M	G	40+	Double row of mature trees.	No action required at present.	A2
G4	Hawthorn	4	5	MS	9	2	2	2	2	1	EM	G	40+	Trees growing beside the close-borded fence.	Remove one tree to make space for the necessary trench (as indicated on the tree removal plan).	C1

A key explaining each category is provided at the rear of the schedule

Tree Schedule - KEY

Tree/Group/Hedge Number

Tree, tree-groups or hedges have been allocated a number for the purpose of this survey. Numbers within the Tree Schedule relate to those marked on the Tree Removal Plan and Tree Protection Plan drawings.

Trees protected by a tree preservation order (TPO) are highlighted by grey colouration in the tree schedule.

Species

Common names are listed.

Number in Group

Number of trees within a group. A group of trees may comprise of more than one species.

Height (m)

All heights are estimated in metres.

Number of Stems

The number of stems is either 1, 2, 3, 4, 5 or MS (multi-stemmed). This feature influences how the area of the recommended root protection area is calculated.

Stem or Combined Diameter (cm)

Single stem diameters are measured at 1.5m with a diameter tape. The combined stem diameters for trees with up to five stems and trees with more than five stems (MS) trees are calculated in accordance with the guidance.

Crown Spread Radius (m)

The crown radius from tree trunk to crown limit identified at the four cardinal points (N, S, E and W) in order to allow presentation of the above ground constraints on the Tree Protection Plan.

Measurements are approximate and recorded to the nearest half metre.

1st Branch (m)

This is a record of the height of the lowest branch. This is useful when planning access routes or considering if pruning will be required to site new features under a tree crown.

Age Class

(Y) Young, (SM) Semi-Mature, (EM) Early-Mature, (M) Mature, (FM) Fully-Mature or (V) Veteran.

Overall Health

An overall assessment of the physiological condition of the tree recorded as (G) Good, (F) Fair, (P) Poor, (D) Dead.

ULE (Years)

Useful Life Expectancy. Anticipated future contribution to amenity, in years.

Tree Structural Condition & Site Notes

Observations on the form of the tree, condition and structural integrity.

Site notes are detailed when relevant to the growth conditions or rooting constraints.

Management Recommendations

Recommended tree surgery works to be carried out prior to construction. Terminology used is based on guidance detailed in BS3998:2010 – Recommendations for tree work¹.

Category

Tree category as defined within BS5837:2012. Categories A (high quality), B (moderate quality) and C (low quality) are trees that should be considered for retention. Category U trees are unsuitable for retention.

¹ British Standards Institution (2010). BS3998 - Recommendations for Tree Work. BSI, London.

APPENDIX 2

SPECIFICATION FOR TREE PROTECTION FENCING

The location of the tree protection fencing that will be required is shown on the tree protection plan, (this is provided at the rear of this document). **For effective tree protection it is crucial that the protective fencing is installed before any heavy plant machinery is used on the site.** The tree protection fencing must remain in place until the construction works have been completed (unless under arboricultural supervision). The fenced off areas will be construction exclusion zones.

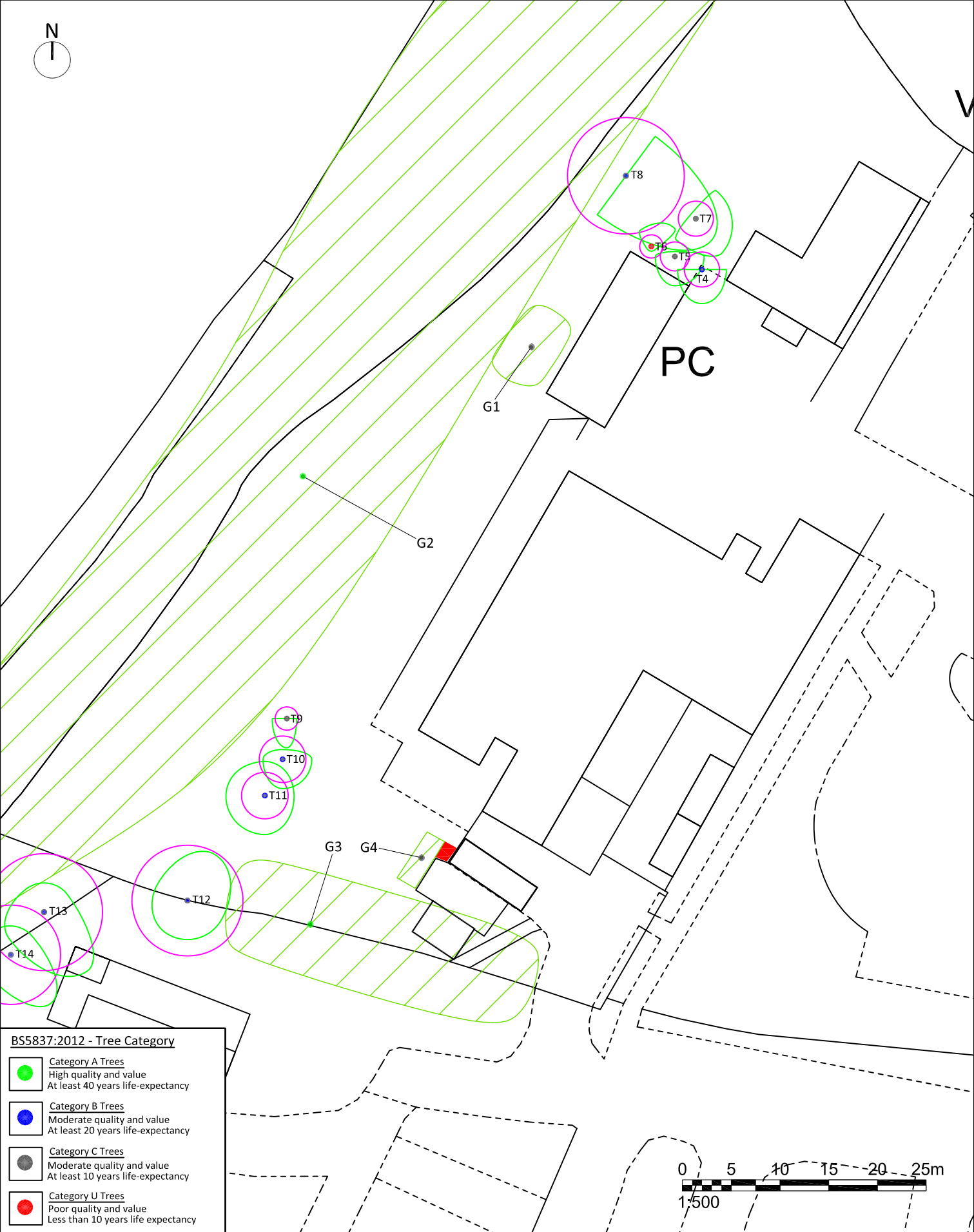
Fencing (or other forms of barrier) must be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees. Since this is a relatively small and short-term project it will not be necessary to install metal fencing supported by a scaffold framework (as detailed in in Figure 2 of BS5837). Instead, it is proposed that Heras panels, cleft chestnut fencing, wire stock fencing, coloured plastic 'snow guard' fencing or simply coloured rope nailed to the top of wooden fence posts that have been driven into the ground would be suitable. In general fences of this nature are about 1.2m high, and they can be installed on standard fenceposts that are hammered into the ground. Whatever fencing method is used it is crucial that the fence is pinned to the ground so that the fenceline cannot be moved by contractors during construction.



Figure 1: The tree protection fencing for this project could be as simple as coloured rope nailed to wooden fenceposts as shown in this image.

Once the barriers have been erected the areas of land within the construction exclusion zone should be regarded as sacrosanct, and should not be removed or altered without prior consultation with the project arboriculturist and, where necessary, approval from the local planning authority. All-weather notices should be attached to the fencing with words such as: 'Construction Exclusion Zone - No Access'. Throughout the construction period attention should be paid to ensure that barriers remain rigid and complete.

Arboricultural supervision will be required whenever construction and development activity is to take place within a construction exclusion zone. This supervision must be carried out by a suitably qualified arboriculturist.



BS5837:2012 - Tree Category

	Category A Trees High quality and value At least 40 years life-expectancy
	Category B Trees Moderate quality and value At least 20 years life-expectancy
	Category C Trees Moderate quality and value At least 10 years life-expectancy
	Category U Trees Poor quality and value Less than 10 years life expectancy

Key

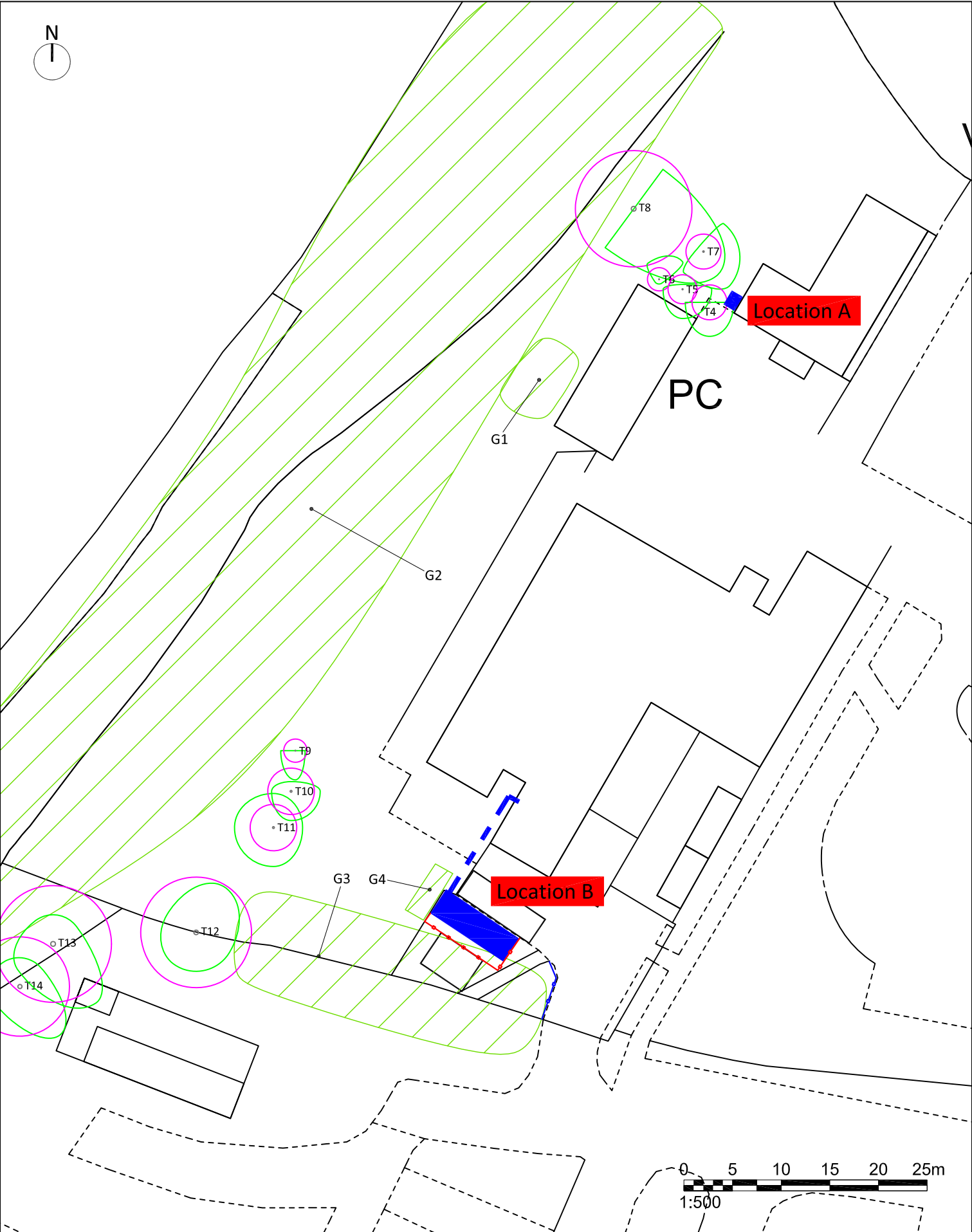
	Root Protection Area
	Canopy spread
	Trunk position
	Tree number
	Tree group
	Tree group to be removed

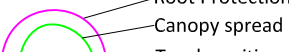
BOSKYTREES

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Project Name: Energy Upgrade Project Stourhead		Client: The National Trust	
Drawing Title: Tree Removal Plan		Agent:	
Drawing Number: TR-1		Date: 26-2-2026	
Revision		Scale: 1:500 @ A4	



Key   Tree group  Tree protection fence  New buried ducting  New fence <td> BOSKYTREES Rook Lane House Christchurch Street West Frome BA11 1EB info@boskytrees.co.uk Tel: 01373 832778 </td> <td> Project Name: Energy Upgrade Project Stourhead Drawing Title: Tree Protection Plan Drawing Number: TPP-1 Revision </td> <td> Client: The National Trust Agent: Date: 26-2-2026 Scale: 1:500 @ A4 </td>	BOSKYTREES Rook Lane House Christchurch Street West Frome BA11 1EB info@boskytrees.co.uk Tel: 01373 832778	Project Name: Energy Upgrade Project Stourhead Drawing Title: Tree Protection Plan Drawing Number: TPP-1 Revision	Client: The National Trust Agent: Date: 26-2-2026 Scale: 1:500 @ A4
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