



BASIN BRIDGE BUNGALOW, STOKE GOLDING, CV13 6LJ

ARBORICULTURAL IMPLICATION STUDY

INCORPORATING A METHOD STATEMENT

AND TREE CONSTRAINTS AND PROTECTION PLAN

Prepared on instruction by

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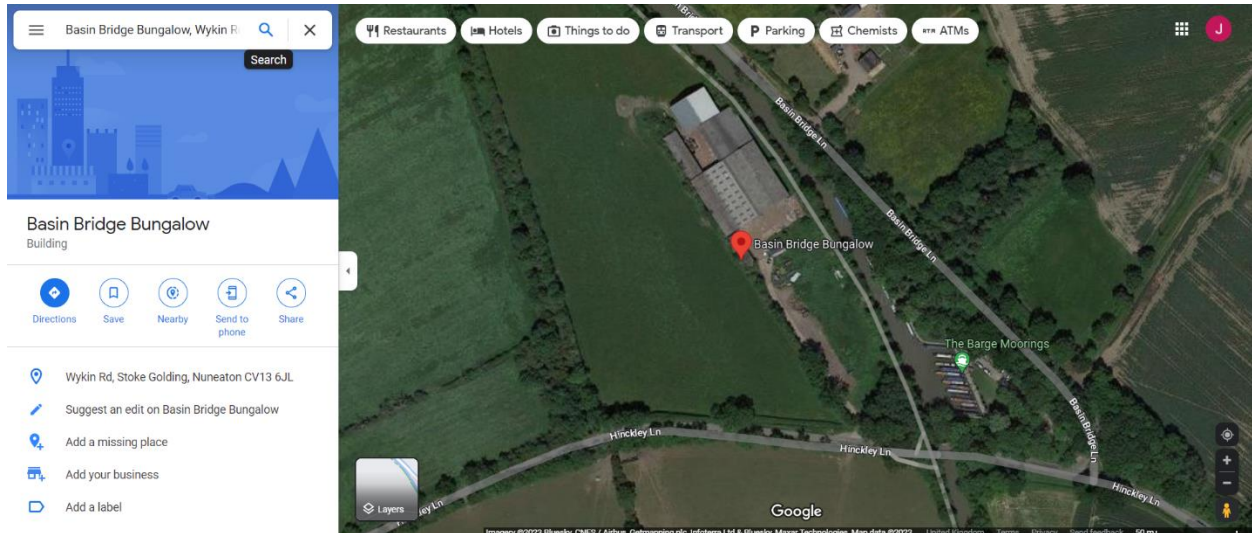
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Introduction

- 1.1 This Arboricultural Implications Assessment and Arboricultural Method Statement aim to identify and address those matters concerning the successful retention of the existing mature trees within Basin Bridge Bungalow, Stoke Golding, CV13 6LJ.



- 1.2 The trees were inspected in March 2023 by Jonathan Alexander Green, who holds an HND in Arboriculture, is also a Professional Member of the Arboricultural Association, and a member of the Consulting Arborist Association. The report follows the guidelines given in BS5837: 2012.
- 1.3 All trees have been inspected from ground level only. Should the further more detailed inspection be deemed appropriate, this is under 'Recommendations'. Trees are dynamic living organisms whose health and condition can rapidly change depending on several external and internal factors. The conclusions and recommendations in this report relate to the trees at the time of the inspection.

2.0 Impact of Proposed Development

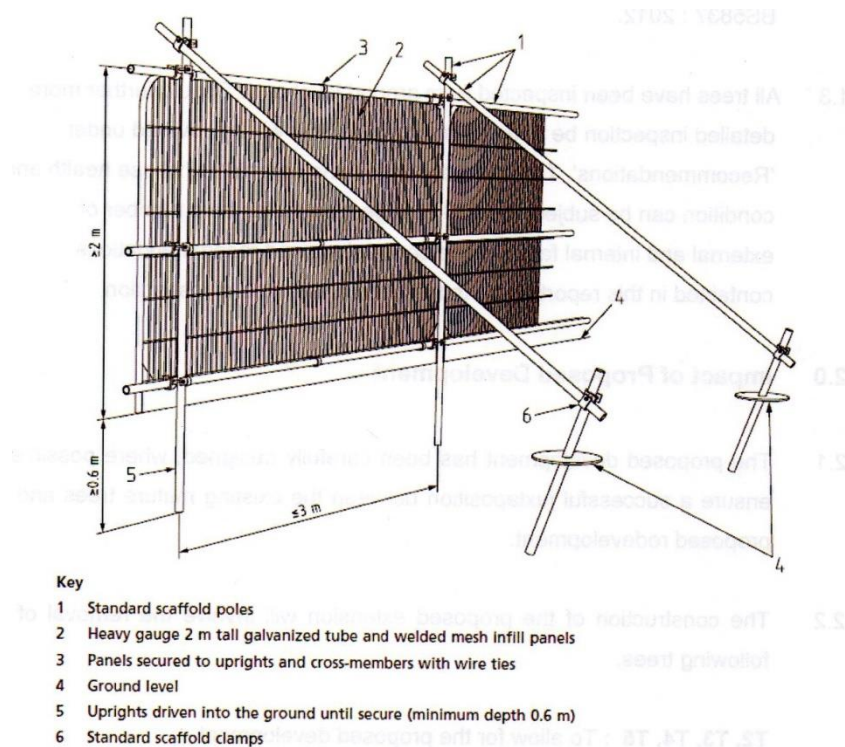
2.1 Proposal:

- To demolish the existing dwelling and build a new one further south.
- The front of the new property will have parking.
- To revise the current access. The existing opening will be planted with a new hedge. The new access will be located approximately 10m west. This will take out the southern end of hedge A, and the new route will take it between T1 and T2.

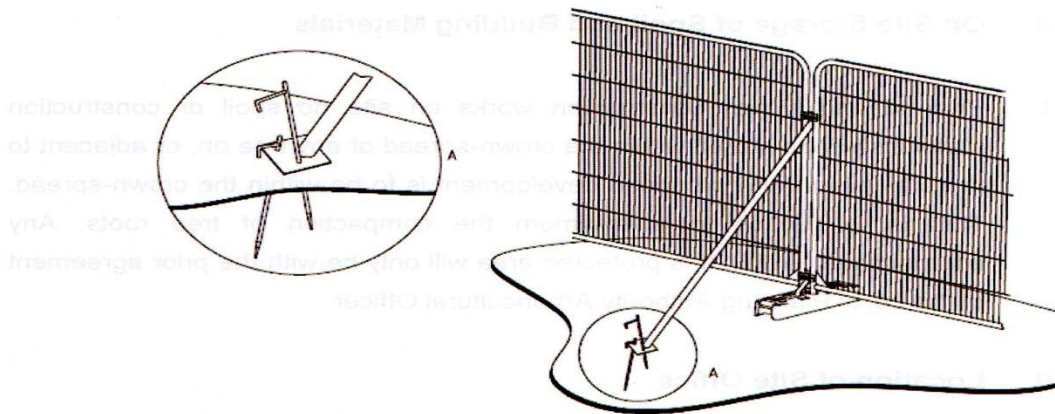
- 2.2 The proposed development WILL NOT involve the removal of a surveyed tree. However 10m section of the hedge will be removed to accommodate the new entrance/drive (see the tree constraints and protection plan).
- 2.3 The proposed development WILL be within the root protection area of the surveyed tree T2 and T7.

3.0 Tree Protection

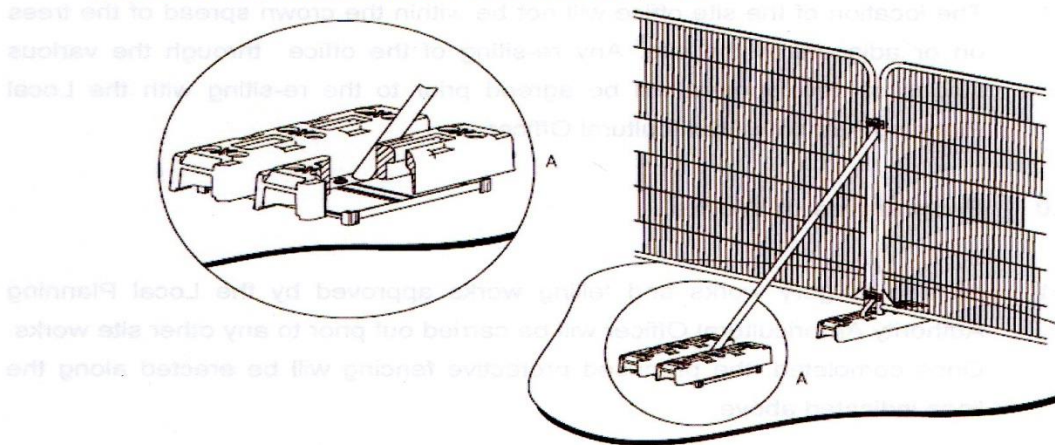
- 3.1 Trees that are to be retained adjacent to or within the site will be protected by stout fencing erected at specific distances from the base of the trees. This fencing will be constructed with weld mesh on a framework of scaffolding, or similarly sturdy material (Herras type fencing), driven into the ground to a suitable depth to ensure its suitability, all in line with BS5837: 2012 figure 2 (shown below)



Alternatively, the herras fencing may be supported as shown below, and in line with BS5837 :2012 figure 3

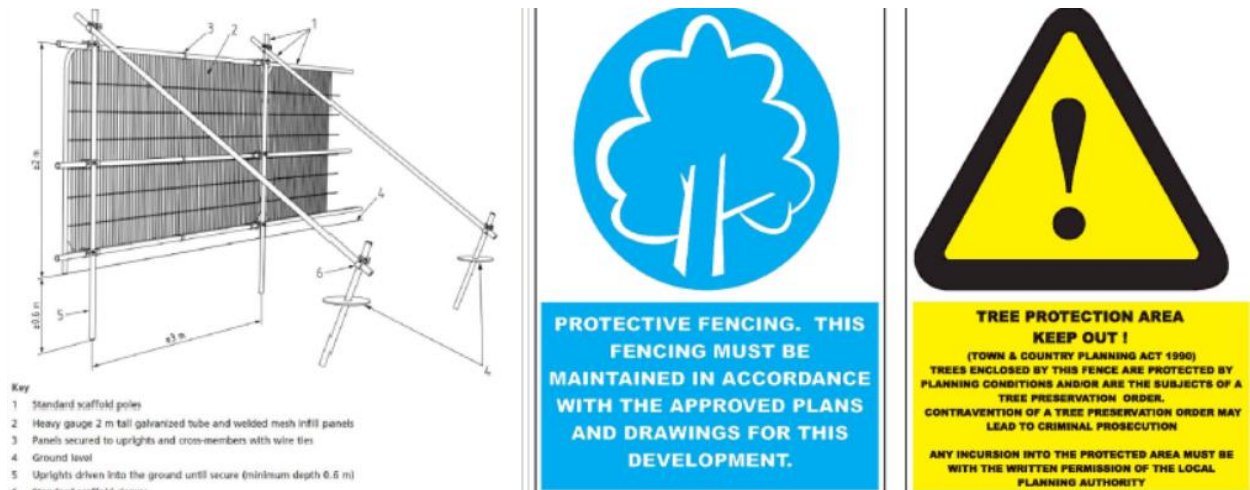


a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

- 3.2 The tree protection fencing must be regarded as inviolate. The tree protection fencing will be erected before the commencement of the development to protect the trees and hedges. Once erected, the fencing will remain in situ. It will not be removed or altered without the prior consent of the Local Planning Authority Arboricultural Officer in consultation with the named arboriculturalist.



3.3 The protective fencing will be erected on the line shown on the Tree Protection Plan drawing.

- The table below will further aid the reader in correctly placing the tree protection fencing to create a construction exclusion zone (refer to the tree protection plan).

Tree I.D.	Root Protection Area	Tree Protection Fence distance from the trunk.
T1	2m	Install the tree protection fence 2m away from the trunk.
T2	8.5m	There must be a 1m gap between the proposed drive's edge and the tree trunk (Southeast). The fence should be 8.5m from the trunk for the remaining cardinal points.
T3	6m	N/A – Unlikely to be a significant amount of roots due to a wide tarmac drive between the tree and the development.
T4	N/A	N/A – Unlikely to be a significant amount of roots due to a wide tarmac drive between the tree and the development.
T5	7.5m	N/A – Unlikely to be a significant amount of roots due to a wide tarmac drive between the tree and the development.
T6	7.5m	N/A – Unlikely to be a significant amount of roots due to a wide tarmac drive between the tree and the development.
T7	8m	N/A – Unlikely to be a significant amount of roots due to a wide tarmac drive between the tree and the development.
T8	8m	N/A – Tree is far away from the development.
T9	3m	N/A – Tree is far away from the development.
T10	3m	N/A – Tree is far away from the development.
T11	4m	N/A – Tree is far away from the development.
T12	3m	N/A – Tree is far away from the development.
T13	4m	N/A – Tree is far away from the development.
T14	4m	N/A – Tree is far away from the development.
T15	5m	N/A – Tree is far away from the development.

T16	5m	N/A – Tree is far away from the development.
T17	4.5	N/A – Tree is far away from the development.
T18	5m	N/A – Tree is far away from the development.
T19	4m	N/A – Tree is far away from the development.
T20	2m	N/A – Tree is far away from the development.
T21	6m	N/A – Tree is far away from the development.
T22	6m	N/A – Tree is far away from the development.
T23	7m	N/A – Tree is far away from the development.
T24	N/A	N/A – Tree is far away from the development.

4.0 Onsite Storage of Spoil and Building materials

4.1 To reduce to a minimum any root compaction before and during construction work onsite, no spoil or construction materials are stored within the crown spread of any tree or hedge on or adjacent to the site, even if the proposed development is within the crown spread. Any encroachment within this protected area will only be with the prior agreement of the Local Planning Authority Officer.

- CEZ = Construction Exclusion Zone (highlighted on the tree protection plan). This report will detail how all digging will be done by hand, and machinery or building material will not be stored in the RPA.
- SEZ = Storage Exclusion Zone (highlighted on the tree protection plan). This report will detail how machinery or building materials will not be stored in the RPA.

5.0 Location of Site Office

5.1 The site office location will not be within the crown spread of the trees. Any re-siting of the office through the various stages of development will be agreed upon before the re-siting with the Local Planning Authority Arboricultural Officer.

6.0 Programme of Works

- 6.1 All tree surgery and felling works approved by the Local Planning Authority Arboricultural Officer will be done before any other site work. Once completed, the proposed protective fencing must be erected along the indicated lines.
- 6.2 A chosen contractor will complete the required work before any onsite construction or demolition commencement.
- 6.3 During construction work, the developer will maintain every effort to prevent unnecessary damage to the trees by ensuring that the tree protection fencing is in place and in good condition.

- 6.4 The site should be inspected regularly by a competent and qualified arboriculturalist. The Arboricultural Officer will be notified immediately of any unforeseen damage. The necessary remedial tree surgery will be carried out at the earliest opportunity with the approval of the Arboricultural Officer.
- 6.5 On completion of the development work on-site, it would be advisable to carry out a further tree survey to identify any remedial tree surgery necessary as a result of the development work and suggest details for future management of the trees.

7.0 Remedial Tree Surgery

- 7.1 Any proposed tree surgery work identified and agreed with the Local Planning Authority will be carried out following BS3998: 2010 (Tree Work – Recommendations). A competent arboricultural contractor will carry out the work. Alterations to the proposed work schedule will be agreed upon with the Arboricultural Officer before the commencement of the work.

Tree I.D	Species	Recommendation
Hedge	Mixed	The section of the hedge (A) is to be removed to make way for the revised access (see the tree protection plan and appendices C & E)

- 7.2 Accidental damage to trees during the construction phase of the development will be noted and reported as per paragraph 11.2 of this document.

8.0 Levels

- 8.1 Should any levels be changed in areas adjacent to the trees or within the minimum recommended distance. The appropriate measures must be taken to minimise the detrimental effect on the trees in question.
- 8.2 Where necessary, a granular material is used that will not inhibit gaseous diffusion, e.g. no-fines gravel or cobbles. All hard surfaces will suit gaseous diffusions, such as brick paviers.
- 8.3 Also, where no dig principles have been used to avoid root loss, the extent of the level increase will be shown as a section on the appropriate engineering drawing.
- 8.4 Minor level change may be required to hide a ground beam or edge of a built-up surface. In all cases, a gentle taper will be used so that the change in level runs out before it reaches the tree(s) affected.
- Some level changes may be required close to T2 (see paragraph 10.0 for further details).

- 8.5 If excavations close to the tree(s) roots greater than 50mm diameter are likely to be encountered; particular care must be taken to avoid damage. These areas' excavation will be undertaken by hand, preventing any damage to the bark. The roots will be surrounded by sharp sand before replacing any soil or other material in the vicinity. Use a concrete plinth to bridge over roots greater than 50mm in diameter.
- Excavations in (T2 & T7) root protection areas will be required (see paragraph 10.0 for further details).

9.0 Services

- 9.1 All service runs are placed outside the crown spread of trees on or adjacent to the site. If impossible to achieve, a section of service run passes within a tree protection area around a retained tree; this must be dug by hand following 'broken trenches' (NJUG 4). To ensure that tree roots are not damaged during the service installation. All root pruning will be agreed upon beforehand with the named arboriculturalist in consultation with the Local Planning Authority Arboricultural Officer. All root pruning will be following BS3998: 2010. All routes for overhead services will aim to avoid the trees. Where this is unavoidable, any tree work will be agreed upon before commencement with the Arboricultural Officer.
- 9.2 All service runs are to be agreed upon with the Local Planning Authority before the commencement of work.
- No service runs within the root protection area of any surveyed tree is proposed.

10.0 Construction Within The tree Protection Area

New Entrance/Drive:

- Install the tree protection fencing as detailed in paragraph 3.3 and the tree protection plan. This fencing must be installed before starting construction and remain in place until all construction is completed (T1 & T2).
- Remove the section of hedging using hand tools when working in the yellow heatched area (see the tree protection plan special precautions).
- Lay down wooden boarding as ground protection when working in the root protection area with heavy equipment or machinery.
- Existing surfacing should be removed with care and any machine should work backwards over the area to prevent damage to any exposed RPA. It is preferable to leave any existing sub-base in situ if new surfacing is to be laid.
- All soil removal must be done with care to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, flexible clumps of smaller fibrous roots should be retained if they can be displaced temporarily or permanently beyond the

excavation without damage. If hand digging, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots to be removed should be cut cleanly with a sharp saw or secateurs 10–20cm behind the final face of the excavation. Roots temporarily exposed, but to be retained, will be protected from direct sunlight, drying out and extremes of temperature by appropriate covering such as dampened hessian sacking.

- All new surfacing must be set back from trunks and buttress roots by at least 50cm, unless otherwise agreed by the supervising arboriculturist. Fill low points on undulating surfaces to an even level with any high points using an agreed granular material such as sand or stone. Do not mechanically compact new fill or existing soil. Use a three-dimensional cellular confinement system is used, and install it according to the manufacturer's technical specification.
- Note: The cellular fill will be washed angular stone with no fines, as specified by the manufacturer.

New Hedge:

- When working close to the root protection area of T9 (see the tree protection plan), hand tools must be used to excavate/break up the existing surface.

New Dwelling:

- The proposed location is away from the surveyed trees, including (T6&T7). An existing substantial tarmac drive sits between the trees and the proposed location. A ditch runs between the trees and the existing drive. It is, therefore, my professional opinion that root damage will be minimal when constructing the new drive immediately at the front of the proposed dwelling. The hedge and the ditch will also act as a natural tree protection barrier. Therefore no special precautions or tree protection fencing is required. However the Construction Exclusion Zone (see the tree protection plan) must be adhered to at all times until all construction is completed. This also relates to the other surveyed trees which are further away (see paragraph 3.3).
- Lay down wooden boarding as ground protection when working in the root protection area with heavy equipment or machinery (T7) new drive/dwelling.

10.1 The development DOES fall within the calculated root protection area of the surveyed tree T2 & T7.

11.0 Reporting Procedure

11.1 The development period: A qualified arboriculturalist should be named the contact so that arboricultural issues that arise during the development period can be dealt with effectively.

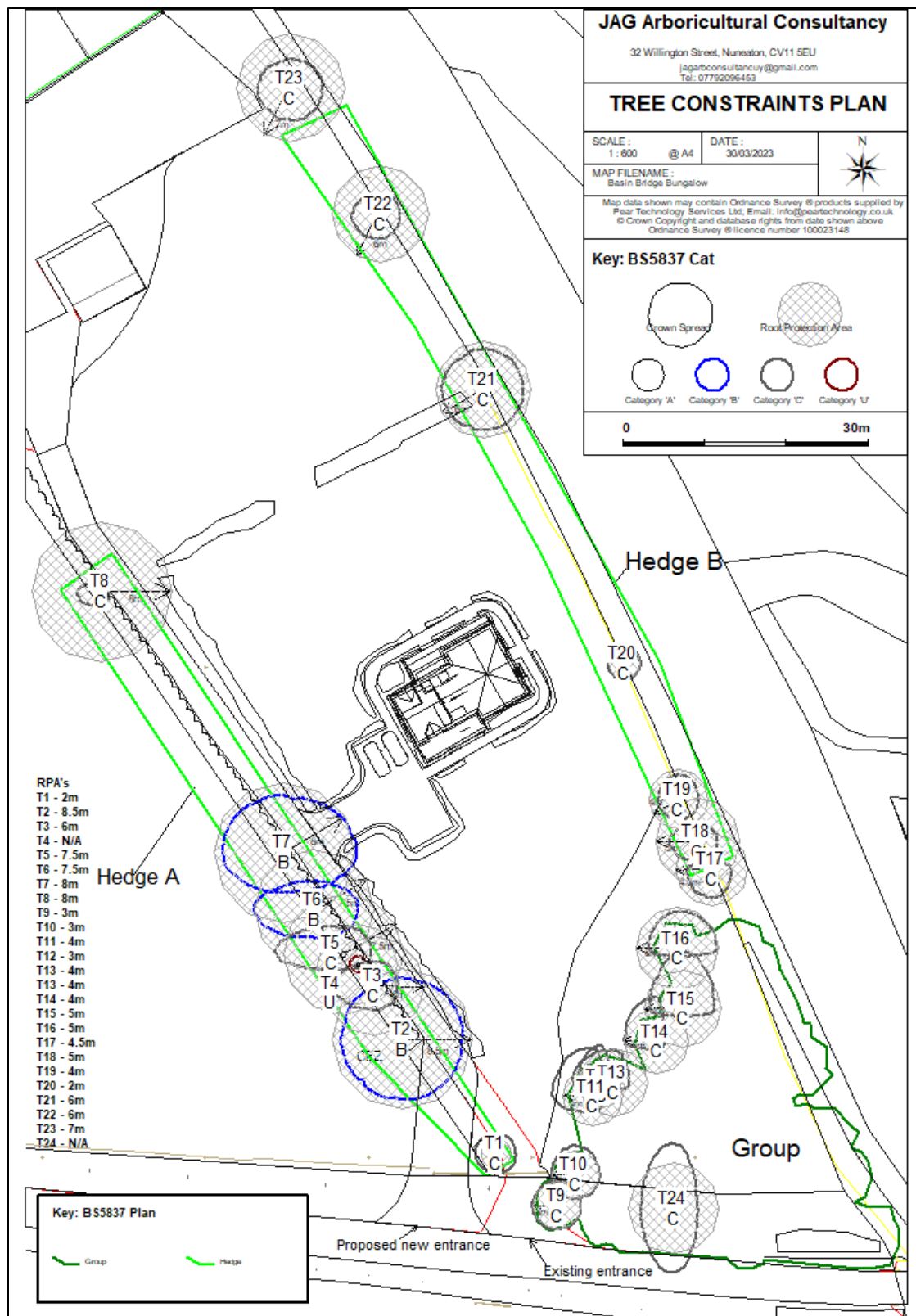
- 11.2 When an inspection occurs, planned or otherwise, a report will be written and provided to the client. The report will be copied to the Local Authority Arboricultural Officer if appropriate.
- 11.3 Ensure arboricultural aspects of the planning permission are enforced and deal with and advise upon any problems that arise during the development process.
- 11.4 The site and proposed development are monitored/inspected regularly by the named arboriculturalist. Should any problems arise during the development, the site manager will contact the named arboriculturalist. The Local Planning Authority must be notified of any arising arboricultural issues, and appropriate action must be taken with the client's prior permission.

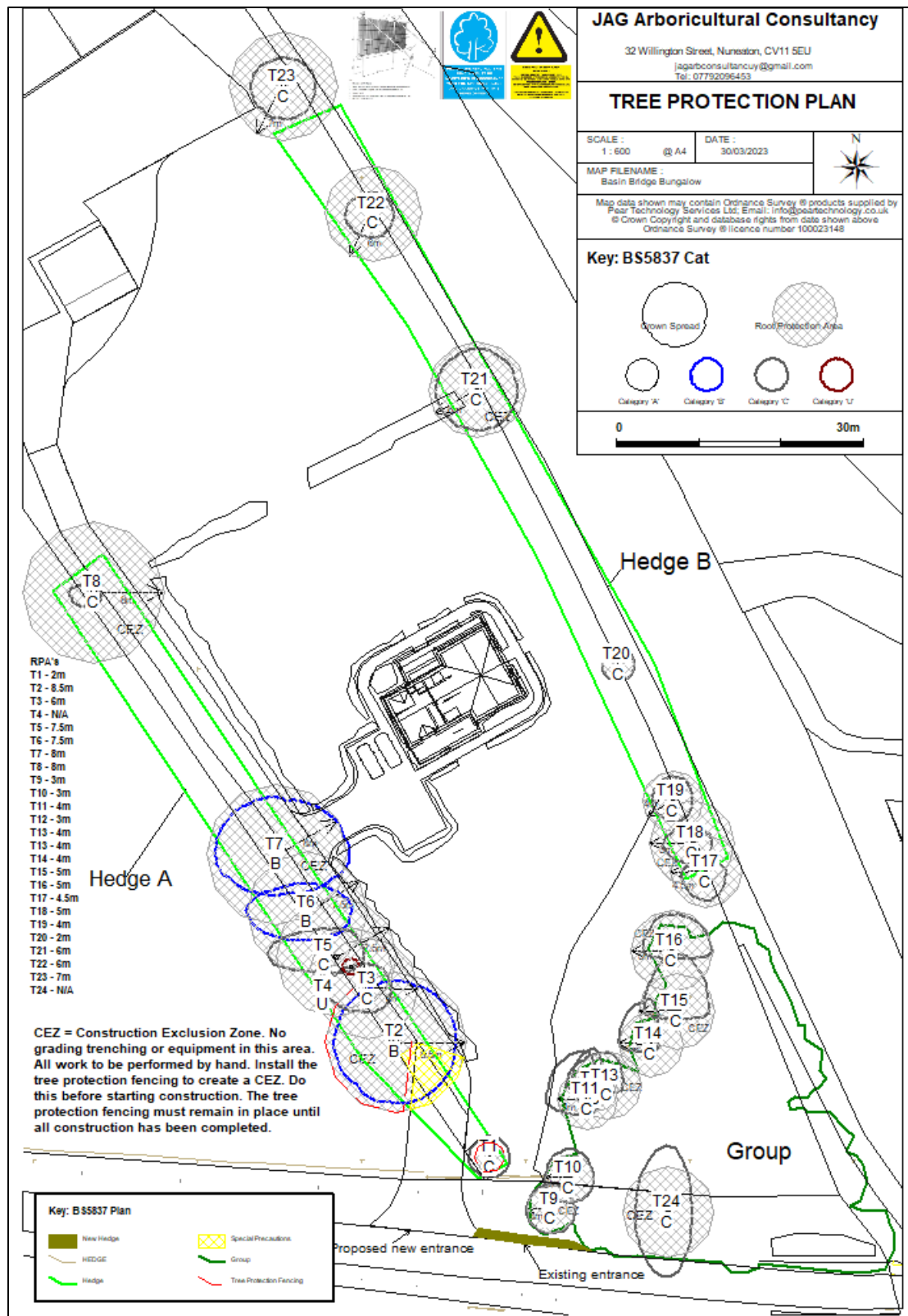
12.0 Tree Constraints & Protection Plans

- 12.1 The Tree Constraints Plan & Protection Plan drawings indicate the trees marked for retention and, if relevant, those for removal in brown. **In this case, no tree is highlighted for removal. However, a section of the hedge (A) is highlighted for removal. This is to make way for the new entrance and drive.**
- 12.2 The tree protection drawing also indicates the location for the erection of the tree protection barriers, based upon the calculation of Root Protection Area (R.P.A.) as part of the Tree Constraints & Tree Protection Plans. The tree protection drawing shows the actual position of the tree protection barriers. Areas that require special precautions are indicated in yellow hatching.

Drawings

Tree Constraints & Protection Plans





Appendices

Appendices A – Pre-Development Tree Survey

APPENDICES A

The following details were recorded in conforming with the guidelines of BS5837: 2012.

Estimate	#
CEZ & SEZ Zone	Construction Exclusion Zone & Crown Exclusion Zone & Storage Exclusion Zone
Tree No	Cross-referenced to the tree survey plan
Species	Common names used
Height in meters	Approximately measured on site
Stem Diameter	Taken in millimetres at 1.5m from ground level where applicable.
Branch Spread	Taken at the four cardinal points to derive a more accurate representation of the tree canopy, N, E, S, W.
Crown clearance	Height in metres of branches from the ground
Age Class	Y = Young, SM = Semi Mature, EM = Early-Mature, M = Mature, OM = Over-Mature
Physiological Condition	G = Good, F = Fair, P = Poor, D = Dead
Structural/ Condition /Comments Preliminary Management - Recommendations	, e.g. Collapsing, the presence of any decay and physical defect, or any other useful comments/observations Work required before commencing on site.
Remaining Contribution In years;	Less than 10, 10-20, 20-40, more than 40
Grading Category	U, (remove), A (high quality), B (medium quality), or C (low quality) Sub – Categories 1 = mainly arboricultural qualities. 2 = mainly landscape qualities. 3 = mainly cultural values. Assessed by visual inspection, considering species, ages, condition, location, and suitability.

Surveyed By: Jonathan Alexander Green MArborA
Site: Basin Bridge Bungalow, Stoke Golding, CV13 6LJ
Date: March 2023

A Pre-Development Site Tree Survey & Schedule Of Works

Tree No	Species	Height	Stem Diameter	Canopy Spread N E S W	Height of Crown Clearance	Age Class	Phys Con	Structural Condition	1 Preliminary Management Recommendations 2 Special Precautions 3 General Comments	Est Remaining Con	Cat Grading
T1	Hawthorn	7.8	150#	N 2.5 E 2.5 S 2.5 W 2.5	4E	M	G	G	1 Install the tree protection fencing as detailed in paragraph 3.3 and the tree protection plan. This fencing must be installed before starting construction and remain in place until all construction is completed. 2 No special precautions are required. 3 No general comment is required.	40y+rs	C1
T2	Common Oak	21	700#	N 7.5 E 7.5 S 7.5 W 7.5	10E	M	G	G	1 Install the tree protection fencing as detailed in paragraph 3.3 and the tree protection plan. This fencing must be installed before starting construction and remain in place until all construction is completed. There must be a 1m gap between the edge of the proposed drive and the tree trunk (Southeast). For the remaining cardinal points, the fence should be 8.5m away from the trunk. 2 New Entrance/Drive: • Lay down wooden boarding as ground protection when working in the root protection area with heavy equipment or machinery. • Existing surfacing should be removed carefully, and any machine should work backwards over the area to prevent damage to any exposed RPA. It is preferable to leave any existing sub-base in situ if the new surfacing is to be laid. • All soil removal must be done with care to minimise the disturbance of roots beyond the immediate excavation area. Where possible, flexible clumps of smaller fibrous roots should be retained if they can be displaced temporarily or permanently beyond the excavation without damage. If hand digging, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots to be removed should be cut cleanly with a sharp saw or secateurs 10–20cm behind the final face of the excavation. Roots temporarily exposed but to be retained will be protected from direct sunlight, drying out and extremes of temperature by appropriate covering such as dampened hessian sacking. • All new surfacing must be set back from trunks and buttress roots by at least 50cm unless otherwise agreed by the supervising arboriculturist. Fill low points on undulating surfaces to an even level with any high points using an agreed granular material such as sand or stone. Do not mechanically compact new fill or existing soil. Use a three-dimensional cellular confinement system is used, and install it according to the manufacturer's technical specification. Do not raise the soil level to leave it touching the trunk, which was previously exposed to air. • Note: The cellular fill will be washed angular stone with no fines, as specified by the manufacturer. New Dwelling: • The proposed location is away from the surveyed trees, including (T6&T7). An existing substantial tarmac drive sits between the trees and the proposed location. A ditch runs between the trees and the existing drive. It is therefore, my professional opinion that root damage will be minimal when constructing the new drive immediately at the front of the proposed dwelling. The hedge and the ditch will also act as a natural tree protection barrier. Therefore no special precautions or tree protection fencing is required. However, the Construction Exclusion Zone (see the tree protection plan) must be adhered to at all times until all construction is completed. This also relates to the other surveyed trees, which are further away (see paragraph 3.3). • Lay down wooden boarding as ground protection when working in the root protection area with heavy equipment or machinery. 3 No general comment is required.	40y+rs	B1

T3	Common Oak	11	500#	N 3 E 3 S 3 W 5	4E	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – Unlikely to be a significant amount of roots due to there currently being a wide tarmac drive between the tree and the development.	40y+rs	C1
T4	Common Oak	17	400#	N 1 E 1 S 1 W 1	8E	Dead	Dead	Dead	1 No tree protection fencing is required. 2 No special precautions are required. 3 Leave as a habitat stick and monitor. N/A – Unlikely to be a significant amount of roots due to there currently being a wide tarmac drive between the tree and the development.	N/A	U1
T5	Common Oak	17	600#	N 3.5 E 3.5 S 2 W 8.5	4E	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – Unlikely to be a significant amount of roots due to there currently being a wide tarmac drive between the tree and the development.	40y+rs	C1
T6	Common Oak	16.5	600#	N 3.5 E 5.5 S 3.5 W 7.5	4E	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – Unlikely to be a significant amount of roots due to there currently being a wide tarmac drive between the tree and the development.	40y+rs	B1
T7	Common Oak	20	700#	N 7 E 9 S 5 W 7.5	8E	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – Unlikely to be a significant amount of roots due to there currently being a wide tarmac drive between the tree and the development.	40y+rs	B1
T8	Common Oak	10.5	700#	N 1 E 1 S 2 W 3	8E	OM	F	F	1 No tree protection fencing is required. 2 No special precautions are required. 3 Has been considerably crown reduced in the past. N/A – The tree is far away from the development.	40y+rs	C1
T9	Aspen	18	240	N 3 E 3 S 3 W 3	12W	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. When working close to the tree, hand tools must be used to when planting the replacement hedge. 3 Ivy clad. N/A – The tree is far away from the development.	40y+rs	B1
T10	Aspen	18	240	N 3.5 E 3 S 5 W 5	9W	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40y+rs	B1
T11	Aspen	18	190; 230	N 6 E 1.5 S 2 W 5	3W	M	F	F - canker	1 No tree protection fencing is required. 2 No special precautions are required. 3 Fell - Canker infection – fair condition – monitor.	10-20yrs	C1
T12	Aspen	18	220	N 5 E 1 S 1 W 3	4W	M	F	F - canker	1 No tree protection fencing is required. 2 No special precautions are required. 3 Fell - Canker infection – fair condition – monitor. N/A – The tree is far away from the development.	10-20yrs	C1
T13	Aspen	18	250; 230	N 4 E 2 S 1 W 5	4W	M	F	F - canker	1 No tree protection fencing is required. 2 No special precautions are required. 3 Fell - Canker infection – fair condition – monitor. N/A – The tree is far away from the development.	10-20yrs	C1

T14	Aspen	21	320	N 5.5 E 1 S 1 W 4	3S	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 Ivy clad and slightly leaning – monitor. N/A – The tree is far away from the development.	40+yrs	B1
T15	Aspen	22	380	N 7 E 4 S 1 W 4	1S	M	G	F	1 No tree protection fencing is required. 2 No special precautions are required. 3 Co-dominant stem with Include fork – monitor. N/A – The tree is far away from the development.	40+yrs	C1
T16	Ash	16. 7	410	N 4.5 E 5 S 1 W 3.5	3N	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 Deadwood in the crown – monitor. N/A – The tree is far away from the development.	40+yrs	C1
T17	Ash	11. 5	280; 160; 160#	N 1 E 2.5 S 3.5 W 3	3W	OM	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T18	Ash	13. 5	300; 300#	N 2 E 2.5 S 2.5 W 3.5	7W	OM	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T19	Hawthorn	8	300#	N 3 E 2.5 S 3 W 2.5	3W	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T20	Ash	9	160#	N 2 E 2 S 2 W 2	5E	OM	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T21	Ash	14	480#	N 5 E 5 S 5 W 5	3W	M	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T22	Ash	12. 7	480#	N 2.5 E 2.5 S 3 W 3.5	3W	OM	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 N/A – The tree is far away from the development.	40+yrs	C1
T23	Ash	13	540#	N 3.5 E 4 S 4 W 4	3W	M	G	F – included fork with snub nosing.	1 No tree protection fencing is required. 2 No special precautions are required. 3 Included fork with snub-nosing – monitor. N/A – The tree is far away from the development.	40+yrs	C1
T24	Ash	20 #	400; 150; 150#	N 8 E 3 S 8 W 4#	4N	M	G	F – Heavy horizontal limb over the road.	1 No tree protection fencing is required. 2 No special precautions are required. 3 Tree is marked with orange paint. Heavy horizontal limb over the road – monitor. N/A – The tree is far away from the development.	40+yrs	C1
Hedge A,	Mixed, Mainly Hawthorn, odd Elm, and odd veteran Oak	4	120	E 2 W 2	E 1	OM	F	F	1 No tree protection fencing is required. 2 No special precautions are required. 3 Boundary hedge. Remove the section of the hedge (10m) as shown on the tree protection plan: To revise the current access, which will be relocated approximately 10m west. This will take out the southern end of hedge A, and the new route will take it between T1 and T2.	40+yrs	C1

Hedge B,	Mixed, mainly Hawthorn, some Ash and the odd Maple	4	120	E 2 W 2	W 1	OM	F	F	1 No tree protection fencing is required. 2 No special precautions are required. 3 Boundary hedge. N/A – Far away from the development.	40+yrs	C1
Group,	Mixed, mainly Aspen, odd Ash and Oak, mainly all young/sm trees	N/A	N/A	N/A	N/A	SM	G	G	1 No tree protection fencing is required. 2 No special precautions are required. 3 Far away from the development.	40+yrs	B1

APPENDICES B

Photos:

Plate 1 shows the Group.



Plate 2 shows hedge A and the surveyed trees.



Plate 3 shows the existing bungalow, and on the right is part of hedge B with some of the surveyed Trees.



Plate 4 shows the existing entrance and T9 surveyed tree. Plate 5 shows T24 with an orange marker at the base.

Plate 4



Plate 5



Plate 5 shows a surveyed tree with a canker infection. Plate 6 shows T1

Plate 5



Plate 6



APPENDICES C

Tree works specification:

Tree I.D	Species	Recommendation	Timeframe
Hedge A (section)	Mixed	Remove the section of the hedge (10m) as shown on the tree protection plan: To revise the current access, which will be relocated approximately 10m west. This will take out the southern end of hedge A, and the new route will take it between T1 and T2. The length of hedge to be removed is 10m.	Complete when construction is finished.

APPENDICES D

Planting specification:

Hedge A - Replacement Hedge – Must be mixed native species. Instant hedging trough. The total length of the hedge to be replaced is 13m. 160cm/180cm - Plant x 7	The planting location is shown on the tree protection plan.	
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Replacement Hedge Specification:

Written Specification For Planting Instant Hedging

Planting instant hedging couldn't be easier. There's no need to worry about calculating how many plants you need per metre as they have already been spaced out for you. Simply buy one 1m unit for every metre of hedge you require. Instant hedges will require two people to lift. Follow our planting instructions below, using one trough for every one metre of planting site:

1. Start by digging a trench roughly as deep as the instant hedging trough or bag, leaving enough additional space to dig in some well-rotted organic matter.
2. Next, sprinkle Rootgrow in the bottom of the trench, following the recommended quantities found on the packet.
3. Remove the hedging unit (you'll need two people for this), and place it in the trench.
4. Backfill and firm the hedging unit down into the trench.
5. Water your new hedge well and then sit back and enjoy the instant impact it adds to your garden.

Ref <https://www.best4hedging.co.uk/blog/how-do-i-plant-instant-hedging/>

Illustration and example notes for excavation in root protection areas:

SGN

7

Explanatory notes and examples

Excavation in root protection areas



SGN 7-07
Once roots have been located with a fork, a smaller tool such as a trowel should be used to clear soil from around the root to avoid damaging bark and wood.



SGN 7-08
Exposed roots to be retained should be protected from light, drying out, and extremes of temperature, by covering with hessian sacking and/or boards until they can be covered back with soil.



SGN 7-09
Where roots to be retained will be exposed for longer than a few hours and there is a risk of drying out, the hessian covering should be kept damp by watering.



7/10
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SGN
7

Explanatory notes and examples

Excavation in root protection areas



SGN 7-10

Where roots have to be removed, they should be cut cleanly beyond the face of the excavation with secateurs or a saw.



SGN 7-11

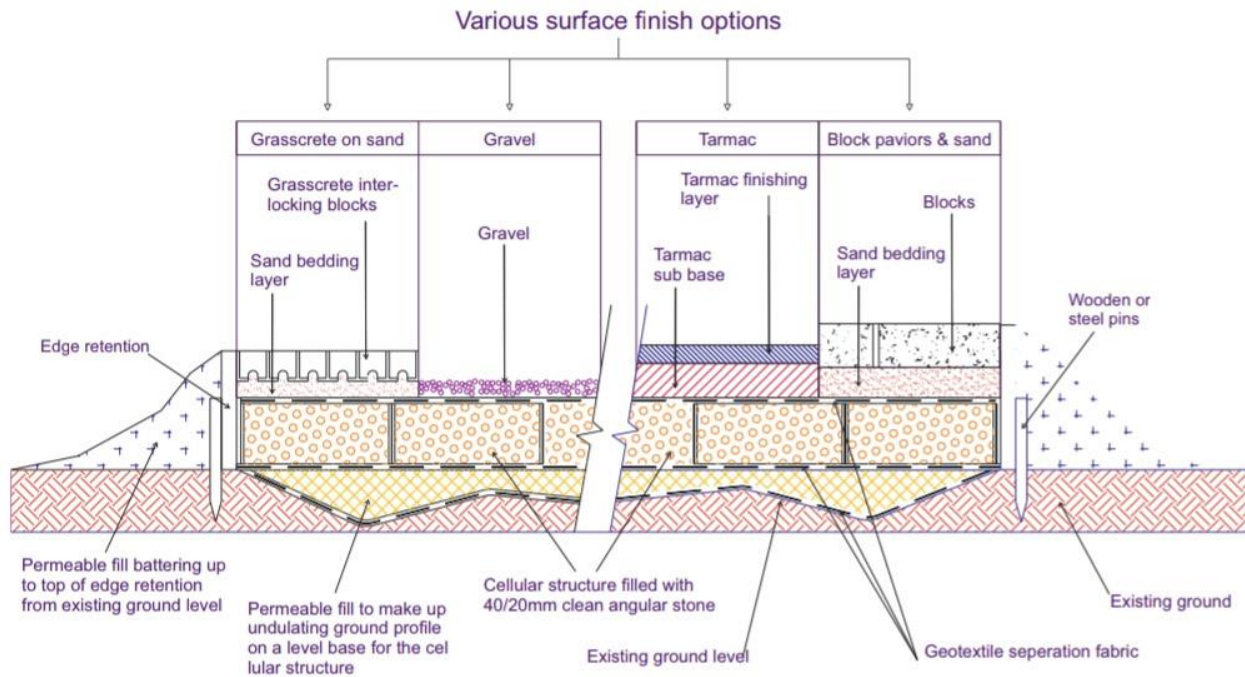
Where large amounts of soil are excavated to expose roots, it should be temporarily stored on heavy duty plywood boards, or similar, to prevent ground compaction to the RPA beneath.



SGN 7-12

Excavation by machines is not permitted in RPAs.

Illustration of Various Surface Finishing Options:



Illustrative specification for no-dig cellular confinement surfacing with examples of finishing options.

Note: The final design must be site specific and detailed by an appropriate specialist

APPENDICES H

Illustration of removing structures close to trees:



APPENDICES I

Illustrative specification for ground protective measures within root protection areas:



Illustration of a three-dimensional cellular confinement system:



Case Study
Cellweb® Tree Root Protection

Location:
Gibside,
Burnopfield
Gateshead

Client:
National Trust

Project:
Car Park



Contractor:
Owen Pugh

OWEN PUGH

Geosynthetics Limited
Fleming Road
Harrowbrook Ind. Est
Hinckley
LE10 3DU
Tel. 01455 617 139
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The National Trust's site at Gibside are Georgian landscape gardens and a vibrant nature haven on a grand scale. After centuries of decline Gibside has been restored to increase visitor numbers especially families. Large quantities of additional parking would be required to cope with the increase in vehicle numbers.

An area of the grounds were identified as a suitable site to house the new car park, however the area was filled with trees and in addition the ground conditions were very poor. The trees were removed to allow the engineers to carry out CBR tests to determine the bulk density of the existing soils.

To create a traditional car park would not have been in keeping with the rural environment also there would have been high costs associated with traditional types of construction on very weak soils.

A solution was needed to provide a free draining, shallow depth construction and to give it the stability required to take vehicular traffic.

We designed a Cellweb®TRP system 150mm in depth. This was infilled with a clean angular 20/4mm stone. Cellweb®TRP is a cellular confinement system that increases the shear strength of infill. This allows a minimal thickness of sub base materials to be used to provide load bearing surfaces.



The Cellweb®TRP was positioned and infilled with the granular material and then topped with a decorative gravel. Cellweb®TRP provided a cost effective solution, sympathetic to its surroundings and allowed reduced construction thicknesses.

The car park has now opened and is taking up to 200 cars per day during the summer opening times.

"We selected the Cellweb® TRP system due to its history of use and performance capabilities. The system was clearly the best solution of its type on the market."

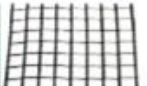
Lee Buchanan – Owen Pugh.





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Bentotex* GCL Geosynthetic Clay Liner		Golpla Grass & Gravel Paving System		T-Block Modular Retaining System	
Cellweb* TRP Tree Root Protection		Golpla Pregrown Ready To Lay Paving System		Telegrid Woven Polyester Geogrid	
DuoDrain* Composite Drainage Product		Interlock Extruded HDPE Geogrids		Televev High Strength Woven Geotextile	
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Ekotex* Non Woven Geotextile		Landlok Turf Reinforcement Mat		Total Traffic Exopave Heavy Duty Paver	
Fiberforce* Equestrian Geotextile		Nicospan Erosion Control		Trinter Erosion Control Mat	
Fibertex Non Woven Geotextile		Rhyno* Woven Geotextile		Turfmesh Grass Reinforcement	
Flexitex Textile Shuttering		RockBox Gabion Mattresses		RootBlock Root Barrier	



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Installing/
upgrading
surfacing in root
protection areas



SGN 9-01

The flat-packed three-dimensional cells are pulled apart, spread across the area to be surfaced, and pinned in place ready for the washed angular stone fill (with no fines).



SGN 9-02

The stone-filled cells spread the load of traffic to prevent localised compaction. The permeable geotextile membrane on the ground allows the movement of water and gasses, but prevents the migration of stone into the soil profile.

Illustration and guidance notes for raising soil levels:

SGN

12

Summary guidance for site operatives

Landscaping
in root protection
areas

Administration

- Unauthorised damage to protected trees is a criminal offence and could lead to enforcement action.
- Work under the normal site risk assessment procedures and comply with the wider site safety rules.
- Brief operatives entering root protection areas (RPAs) by the supervising arboriculturist before work starts.

Other relevant SGNs

- Monitor works in RPAs by the supervising arboriculturist (See *SGN 1 Monitoring tree protection*).
- Design access to avoid soil compaction (See *SGN 3 Ground protection*).
- Minimise excavation into original undisturbed soil (See *SGN 7 Excavation in root protection areas*).
- Install hard landscaping according to *SGN 9 Installing/ upgrading surfacing in root protection areas*, and *SGN 10 Installing structures in root protection areas*.

Important reminders

- No heavy mechanical cultivation such as ploughing or rotavation.
- Do not fill above the original ground levels within the RPAs of retained trees until the precise depth of fill has been agreed and authorised by the supervising arboriculturist.
- Never raise soil levels to leave soil touching a trunk that was previously exposed to the air.

SGN
12

Explanatory notes and examples

Landscaping in root protection areas



SGN 12-02

Soil should not be heaped against trunks and no level changes should occur within 1m of the trunk unless authorised by the supervising arboriculturist. The raised soil levels against this trunk and across the RPA caused the decline of this tree.



SGN 12-03

Healthy mature trees had adjacent soil levels raised by over a metre in their RPAs because provision was made for load spreading and aeration.



SGN 12-04

This tree had tarmac parking within its RPA that was removed and replaced with an organic mulch near the trunk and limited no-dig surfacing on the outer edges of its RPA.