

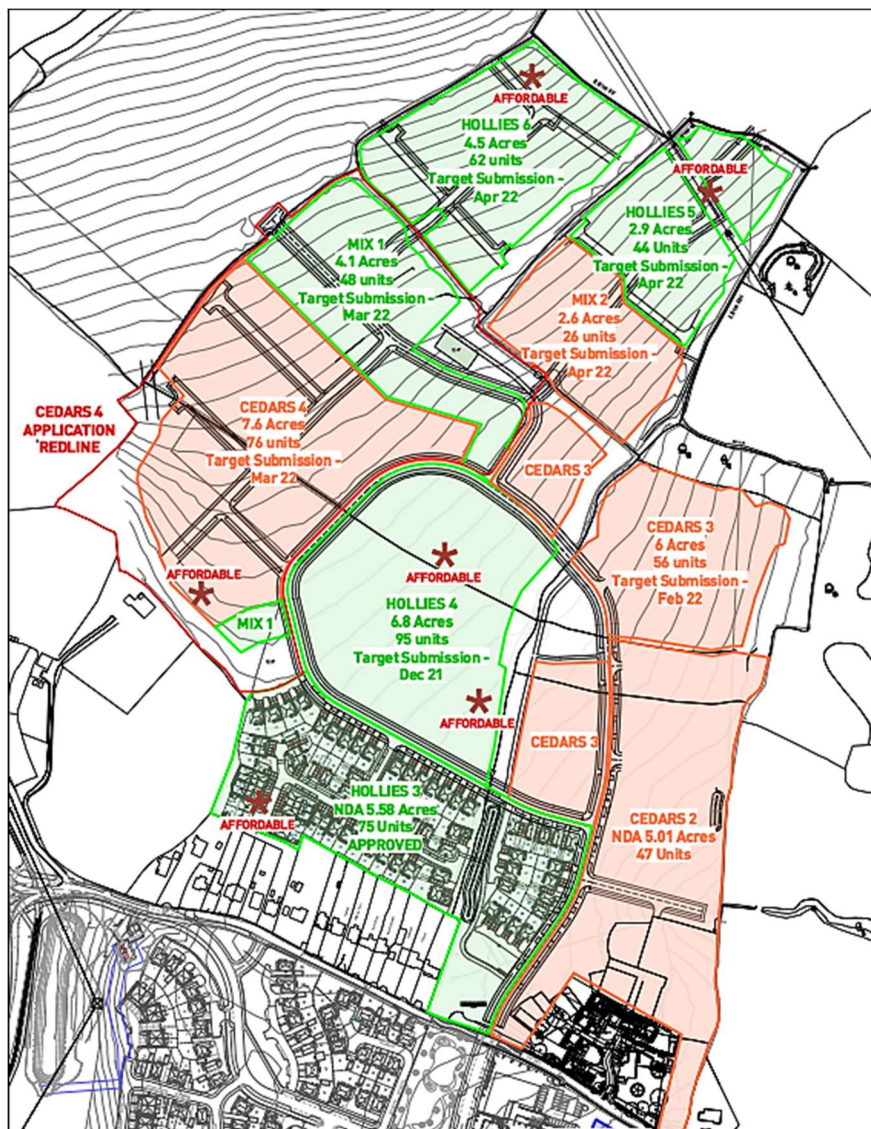
Arboricultural Method Statement

in accordance with
BS 5837:2012 (Item 6.1)

At
Great Milton Park, Llanwern.
Phase: Hollies 4

Dated: July 2025

On the instructions of
Redrow Homes Ltd

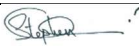
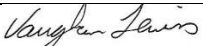


Reported by Mr. Vaughan Lewis Tec.Arbor.A. MArbor.A.

Of

Steve Ambler & Sons Tree Specialists Ltd

Email - Vaughan@steveambler-trees.com Web - www.steveambler-trees.com

Signed - Steve Ambler		Signed - Vaughan Lewis	
Date	18th July 2025	Date	8.7.2025

CONTENTS

1.0 INTRODUCTION, SCOPE AND BACKGROUND.....	3
2.0 TREE PROTECTION PLAN	5
3.0 ARBORICULTURAL METHOD STATEMENT - SITE SPECIFIC MATTERS.....	9
4.0 TREE FELLING AND SURGERY	9
5.0 BARRIER FENCING.....	10
6.0 REMOVAL OF EXISTING STRUCTURES AND HARD SURFACES.....	13
7.0 INSTALLATION OF TEMPORARY GROUND PROTECTION.....	13
7.1 Installation of Services and Specialised Trenchless Techniques.....	14
8.0 EXCAVATIONS	18
9.0 INSTALLATION OF NEW HARD SURFACING – MATERIALS AND DESIGN CONSTRAINTS	18
10.0 SPECIALIST FOUNDATIONS	23
11.0 BOUNDARY TREATMENTS FENCING	23
12.0 PREPARATORY WORKS FOR NEW LANDSCAPING.....	24
13.0 GENERAL MATTERS	26
14.0 AUDITABLE SYSTEM OF ARBORICULTURAL SITE MONITORING.....	26
14.1 Schedule of Watching Brief Visits.....	27
15.0 SITE SPECIFIC ARBORICULTURAL EVENTS.....	28
15.1 Communications List.....	28
16.0 LEGAL CONSTRAINTS	29
17.0 LIMITATIONS OF THIS REPORT.....	30
18.0 GLOSSARY OF TERMS	30
19.0 REFERENCES	31
APPENDIX A - SPECIFICATION FOR PROTECTIVE BARRIER.....	32
APPENDIX B - FIGURE 1 THE DESIGN AND CONSTRUCTION PROCESS AND TREE CARE.....	33
APPENDIX C - TABLE 3. TRENCHLESS SOLUTIONS FOR INSTALLING UTILITY APPARATUS	34
APPENDIX D - TREE PROTECTION PLAN	35

1.0 INTRODUCTION, SCOPE AND BACKGROUND

Steve Ambler & Sons Tree Specialists Ltd are instructed by Anthony Smith (Technical Project Manager) Redrow Homes Limited, to undertake an Arboricultural Method Statement (AMS) for the proposed housing development phase 'Hollies 4' at Great Milton Park. This AMS is a requirement imposed by the Local Planning Authority (LPA) as a condition of planning.

This assessment takes account of the previous Tree Survey¹, Arboricultural Implications Assessment², and the current layout.

This Arboricultural Method Statement looks at the potential risk of injury to trees from construction activities and advises on techniques and physical barriers to help protect them and their immediate environment. Its purpose is aimed at protecting trees of importance from construction damage and is prepared along the guidelines set out in the relevant British Standard³.

The level of detail available is often a limiting factor when developing an AMS, so while a preliminary AMS may be prepared for planning, it is often post-planning when detailed design occurs. Unforeseen issues may arise and therefore, following the iterative approach, further design may be required.

Important notes are highlighted with a grey background and all Method Statements occur with a light blue background for ease of reference.

NOTE - The most important element in delivering a successful scheme is the engagement of a Project Arborist for the duration of the construction phase and to oversee areas of specific concern. This engagement also maintains a line of communications between all parties and particularly the Local Planning Authority.

Where necessary, recommendations are provided on employing tree friendly construction techniques using acceptable arboricultural practices.

The following drawings were provided.

- P21-3058_01AG-Site Layout Hollies 4
- 10275 - 300 - 01R - 02S - Hollies 4 - Engineering Plans
- 10275 - 300 - 05B - Bioretention Verge Details
- 10275 - 907 - 07 - 02A - Ditch 4A - Cross-Sections
- 10275 - 907 - 08 - 01 - Ditch 4B - Details
- JFH5H_UWN_00L_Proposal_3 (Hollies 4)
- M2UTIL-JMS-EL-MUN3114-DR-W-0010
- WMR0003012.001.01

The following documents were provided.

- φ Tree Preservation Order sketch provided by NCC (found in Appendices)

¹ Tree Survey, Categorisation and Constraints Report June 2023 Rev 4 (Ambler SJ)

² Arboricultural Impact Assessment Report August 2023 (Ambler SJ)

³ British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction - Recommendations

Planning Conditions.

Pre- commencement conditions

Arboricultural Method Statement

2. No operations of any description, (this includes all forms of development, tree felling, tree pruning, temporary access construction, soil moving, temporary access construction and operations involving the use of motorised vehicles or construction machinery), shall commence on site in connection within the development, until a detailed Arboricultural Method Statement has been submitted to and approved in writing by the Local Planning Authority. (The Arboricultural Method Statement shall contain full details of the following:

- (a) Hedge Laying -full details including timing and methodology of the hedge laying, plus the name/contact details of the specialist hedging contractor;
- (b) Any landscaping operations within RPAs (including no dig construction of path);
- (c) Construction exclusion zones;
- (d) Protective barrier fencing;
- (e) Tree Protection Fencing;
- (f) Ground protection;
- (g) Service positions;
- (h) Special engineering requirements including 'no dig construction';
- (i) Pre-construction tree works;

The development shall be carried out in full compliance with the Arboricultural Method Statement unless otherwise first agreed in writing by the Local Planning Authority.

Reason: To protect important landscape features within the site in accordance with Policy GP6 of the NLDP 2011-2026 (adopted January 2015).

This Report is written by Vaughan Lewis, our Arboricultural & Woodland Consultant, who has worked within the arboricultural and forestry sectors for over 25 years, most recently as the Principal Arboricultural and Woodlands Officer for a local authority. Vaughan holds the following relevant qualifications: -

- a) Professional Technician in Arboriculture (Arboricultural Association)
- b) Professional Member of the Arboricultural Association
- c) Landscape Science, Higher National Diploma -Distinction. (Pencoed College (University of Glamorgan)
- d) Woodland Management, National Diploma - Distinction (Hereford College of Agriculture)
- e) Rural Studies, Btec First Diploma – Distinction (Pencoed College)
- f) Lantra Award, "Bats and Arboriculture – A Guide for Practitioners" developed by The Bat Conservation Trust.
- g) Professional Tree Condition Certificate (Lantra Awards)

This Report reviewed and approved by Steve Ambler Cert.Arb.(RFS)., Tech.Arbor.A., Dip.Arb.(RFS)., F.ARBOR.A., a professional Arboriculturist and Fellow of the Arboricultural Association having over 45 years' experience within the industry and 19 years of which being served in Local Government as a principal arboricultural and woodlands officer.

This Consultancy Practice was established in 1999 and expanded in 2006 with the launch of a specialist 'Tree Management Unit' under the revised name - Steve Ambler & Sons Tree Specialists Ltd. Steve Ambler holds the relevant qualifications: -

- a) Certificate in Arboriculture (Royal Forestry Society)
- b) Professional Technician in Arboriculture (Arboricultural Association)
- c) Professional Diploma in Arboriculture (Royal Forestry Society)
- d) Fellow Member of the Arboricultural Association.
- e) Lantra Award, "Bats and Arboriculture – A Guide for Practitioners" developed by The Bat Conservation Trust.

NOTES.

1. Any alternative construction methods provided here are based on known alternative solutions for tree friendly construction. However, they are suggestions only which should be fully assessed and approved by the Clients Engineer and other appropriate specialists.
2. The reference numbers of the surveyed trees are included in the survey schedule and shown on the Tree Protection Plan in the Appendix which should be read in accordance with this Report.
3. In all cases where tree positions distances may be critical (e.g., in accurately determining clearances between a tree and a proposed structure) all dimensions should be checked on site.
4. The provision and acceptance of this Report are subject to the general terms and conditions of Steve Ambler & Sons Tree Specialists Ltd

2.0 TREE PROTECTION PLAN

The below ground constraints of any retained tree are equal to its required Root Protection Area (RPA) and this distance for each tree or group is provided within the Tables in both the Tree Constraints Plan and Tree Survey¹ and also reproduced below in Table 1. The distance given is a radial measurement in metres and is provided in the column highlighted yellow. This radial distance must be measured from the centre of the tree's stem.

IMPORTANT NOTE. There are no direct tree, hedge or group losses directly associated with this phase of development. Those that have been lost occur under previous phases of development.

Table Key.

- Root Protection Area = Yellow Infill
- Trees & Groups Lost to Previous Development Phases= Red infill
- Groups Partially Lost to Previous Development Phases = Orange Infill (G167)
- Areas of Caution = Purple Infill

Table 1.

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M2)	Root Protection Radius (M)
					N	S	E	W									
H4a	NA	Blackthorn, hawthorn, ash, goat willow	5	200	2	2	4	4	0	0	M	Dense native hedge, derived from coppice stools on an old, seemingly double bank and ditch. The finishing width of this hedge needs to be determined following the proposed hedgerow management operations as it may well exceed the nominal 3m width drawn in the Tree Constraints Plan. LOST TO DRAINAGE CHANNEL UNDER PREVIOUS PHASE CEDARS 3.	Refer to - 23-028 Great Milton North of Cot Hill Tree & Hedge Management Plan	40+	B 2,3	18	2.40
H4b	NA	Blackthorn, hawthorn, ash, goat willow, wild privet, dog rose, field maple	6	200	2	2	3	3	0	0	M	Dense, native hedge, derived from coppice stools on an old, bank and ditch field boundary. BISECTED BY ROAD & PARTIAL LOSS UNDER PREVIOUS PHASE CEDARS 3. Fell several dead stems.	Refer to - 23-028 Great Milton North of Cot Hill Tree & Hedge Management Plan.	40+	B 2,3	18	2.40
G6	NA	Ash, hawthorn, field maple, crab apple	11	275	3	3	7	7	3	2	EM	A double row of standard trees of average form, within Hedge H4b. Deep rutting noted to the east within 2-3m of the outer stems. Ash dieback disease (<i>Hymenoscyphus fraxineus</i>) Health Stage 1-3 on a few ash. Tag	Monitor crown health annually during the growing season. Access facilitation pruning maybe required.	40+	B 2,3	34	3.30

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M2)	Root Protection Radius (M)
					N	S	E	W									
												571 – Ash dieback disease (Health Stage 3 with notable dieback in north stem)	Fell ash (tag 571)				
12	569	Pedunculate oak	18	775	6	5	7	9	4	2	M	Standard, twin-stemmed tree of reasonable form, located in H4b. Dense ivy occludes a full inspection.	None	40+	B 2,3	272	9.30
28	NA	Ash	15	425	7	8	6	6	3	3	EM/M	Quadruple stemmed specimen within corner of field between H8b and H4a. Dense ivy and blackthorn restrict access for an inspection, with stem measurements estimated. The retention category is provisional subject to a more detailed inspection. RAISED PATH OVER RPA TO THE EAST.	Remove vegetation and ivy up to 3-m AGL so Arborist can undertake a condition inspection. Assess current crown health in relation to threat from infection of Ash dieback disease (<i>Hymenoscyphus fraxineus</i>)	20-40	B 2,3	82	5.10
29	581	Ash	17	500	7	6	6	7	4	2	EM	Standard of reasonable form, in H8b.	Reduce the north-east, elongated limb, formed at 4-m AGL by 3m. Monitor crown health annually during the growing season.	40+	B 2,3	113	6.00

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M2)	Root Protection Radius (M)
G167 (Hedges)	NA	Hawthorn, Ash, Field rose, Wild privet, Elder and Blackthorn	/	/	/	/	/	/	/	/	EM/M	Two sections of this hedgerow occur within this phase covered here. The whole group contains four sections of native hedgerow, along an old field boundary. The group number is taken from a previous tree survey TCP produced by a third party. We have not been provided with a copy. NORTH SECTION & WEST SIDE OF HEDGE NOW LOST TO PROPOSED BIORETENTION VERGE. PARTIAL LOSS HAS ALREADY OCCURRED TO THE SOUTH FOR THE ROAD & SUB-STATION (ADJOINING PHASE OF DEVELOPMENT)	Refer to - 23-028 Great Milton North of Cot Hill Tree & Hedge Management Plan	40+	/	/	/

A Tree Protection Plan is provided in Appendix D which is an essential tool providing information for protecting retained trees from injury and damage during construction works – it provides...

- φ The Root Protection Area (RPA) shown as a solid orange line. The radial distance provided is taken from the centre of the tree's main tree.
- φ The correct positioning for installing suitably robust barrier fencing.
- φ A suitable and robust barrier fencing detail as recommended in the British Standard³.

All trees are drawn using a coloured solid line per their retention category -

- φ U - Dark red dashed line,
- φ A - Light green
- φ B - Mid blue
- φ C - Grey

Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, the RPA will be drawn as a polygon. Such modifications to the shape of the RPA will reflect a soundly based arboricultural assessment of likely root distribution.

Proposed new planting is also marked on the plan as a 'constraint', and soil should be protected from compaction with the use of barrier fencing where this is to occur.

3.0 ARBORICULTURAL METHOD STATEMENT - SITE SPECIFIC MATTERS

The British Standard promotes the Arboricultural Method Statement (AMS) should be appropriate to the proposals and might typically address some or all the following mentioned below, however this list is by no means exhaustive and additional comments are found.

- a. Tree Felling
- b. Specification for the barrier fencing to enclose the RPA of retained trees.
- c. Location of the barrier fencing to enclose the RPA.
- d. Installation of temporary ground protection.
- e. Demolition of existing structures.
- f. Excavations and the requirement for specialised trenchless techniques.
- g. Installation of new hard surfacing - materials, design constraints and implications for levels.
- h. Specialist foundations - installation techniques and effect on finished floor levels and overall height.
- i. Retaining structures to facilitate changes in ground levels.
- j. Preparatory works for new landscaping.
- k. Auditable/audited system of arboricultural site monitoring, including a schedule of specific site events requiring input or supervision.
- l. Include a list of contact details for the relevant parties.

4.0 TREE FELLING AND SURGERY

The north section of G167 is now additionally lost to development in addition recommended safety work or access facilitation pruning is given in Table 1 within the 'Preliminary Management Recommendations', column.

Method Statement for Tree Surgery and Felling

1. Engage a Project Arborist (PA) for the duration of works to monitor and advise as necessary under a Watching Brief Scheme.
2. PA to provide a toolbox talk to the approved tree contractors
3. Project Arborist to mark section of hedge (G167) to be removed to accommodate the bioretention verge.
4. Development footprint to be marked out clearly on site if required by the Project Arborist.
5. PA to assess the relationship in respect of retained trees and consider any required surgery or felling. Any access facilitation pruning necessary for Enabling Works to prevent injurious contact between plant machinery and the tree(s) should be listed and presented to the LPA for approval. In some cases, working space may be provided by temporarily tying back tree branches. Pruning or tying should be undertaken in accordance with a specification prepared by an arboriculturist.
6. Tree surgery and felling works must follow an approved Tree Works Schedule that is approved by the Local Planning Authority (LPA).
7. All approved tree works should only be undertaken by a competent arboricultural contractor who shall be made known to the LPA in writing 5 days prior to commencement for their approval.
8. Tree felling and surgery should be undertaken with caution to prevent damage to retained trees and particularly their roots underground. Crush injuries will occur to roots of retained trees if felled within their RPA. In such instances, crash-mats should be used.
9. Legal issues relating to tree felling should be observed (Refer to section LEGAL CONSTRAINTS)
10. Under normal circumstances, the 'approved' tree surgery and/or felling works should be completed prior to the erection of the Tree Protective Barrier Fencing although must come within the Watching Brief element under the supervision of the Project Arborist. (Refer to Section 14.0).
11. No vehicles are permitted within the RPA of any retained tree, without the use of load spreading material.
12. Contractors should be made aware of planning conditions relating to trees within and adjacent to the site and of any Tree Preservation Order or other site designation which may be relevant, through providing 'toolbox talks'.

5.0 BARRIER FENCING

All trees to be retained must be protected using robust physical barriers (as shown in the Tree Protection Plan in the Appendix, which indicates the correct type of fencing and the location for the positioning of the Tree Protection Barriers. This must be erected before any materials or machinery are brought onto site, demolition, stripping of soil or development of any kind commences, apart from approved⁴ tree works mentioned above.

Tree Protective Barrier Fencing Method Statement

1. The developer must ensure all Tree Protective Barrier Fencing is installed prior to any occupation of the site and prior to plant, machinery, equipment, site offices or materials etc being located.
2. Engage a Project Arborist for the duration of works to monitor and advise as necessary under a Watching Brief Scheme.
3. Where required, pre-development approved tree work may be undertaken prior to the installation of tree protection measures which must be under the guidance of the PA and with the agreement of the Local Planning Authority. However, no vehicles will be permitted within any unprotected RPA of retained trees and works must be carried out with due consideration and without causing injury to any retained tree.
4. All approved tree surgery works must be undertaken under the supervision of the PA and ideally completed prior to erection of the tree protective barrier fencing.
5. The PA must identify by marking out the RPA for each tree or group on site, using road pins or fluorescent marker paint.

⁴ Approved by the Local Planning Authority

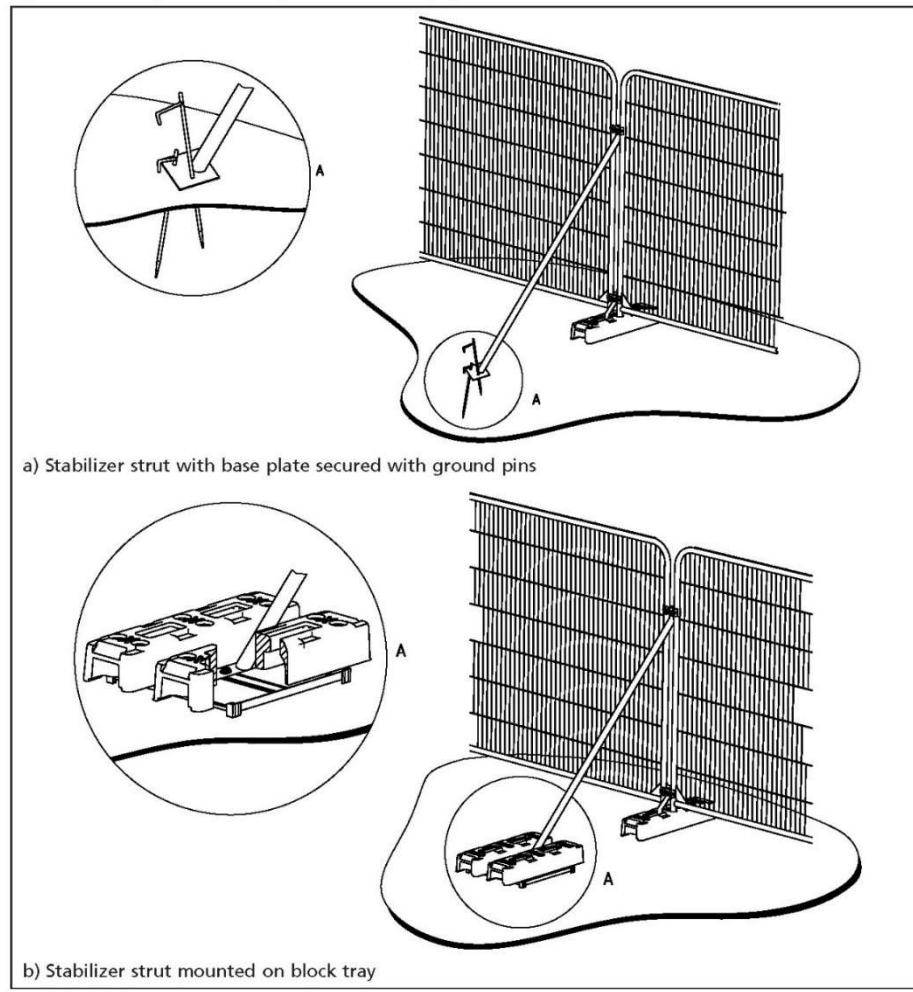
6. Once the Protective Barrier Fencing is in place, it must protect the Root Protection Area or crown spread whichever the greater and be approved and signed off by the PA prior to any demolition, movement of plant and equipment or any site occupancy.
7. The PA will assess if any trimming or tying back of branches is required to prevent contact injury from plant. The PA will seek approval from the LPA of any Works Schedule created, identifying all necessary works.
8. Barriers should be monitored and maintained throughout the construction phase to ensure they remain rigid, complete, and fit for purpose.
9. Any works occurring within any RPA **must** be covered by an 'Approved' Arboricultural Method Statement and may only proceed under the supervision of the Project Arborist.
10. This protective barrier may only be repositioned or moved where covered by an Approved Method Statement and under the supervision of the PA.
11. It should be confirmed by the PA that the barriers and any necessary ground protection are installed correctly prior to the commencement of any other operation and the LPA informed who may wish to attend site and view it first-hand. A method statement is provided later in this report for installing ground protection measures which must be followed.
12. Prior to any construction activity and where due to site constraints construction activity cannot be fully or permanently excluded from all or part of a tree's RPA, appropriate ground, tree stem, and low crown protection must be installed (see section 6.2.3 – BS 5837), under the guidance of the PA.
13. Here, site circumstances dictate the default level of protection is unnecessary due to existing physical site features. Therefore, an alternative specification is prepared which must be agreed with the Local Planning Authority. The provision of a 2-metre-tall, welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels must be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 metre and should be uniform throughout the fence. The panels **MUST** be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g., due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTES.

1. It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.
2. All-weather notices (Example below) must be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE - NO ACCESS". Refer to example notice below.

Figure 3 – Alternative Protective Fencing

Figure 3 Examples of above-ground stabilizing systems



Example of Warning Sign



6.0 REMOVAL OF EXISTING STRUCTURES AND HARD SURFACES

- Not applicable.

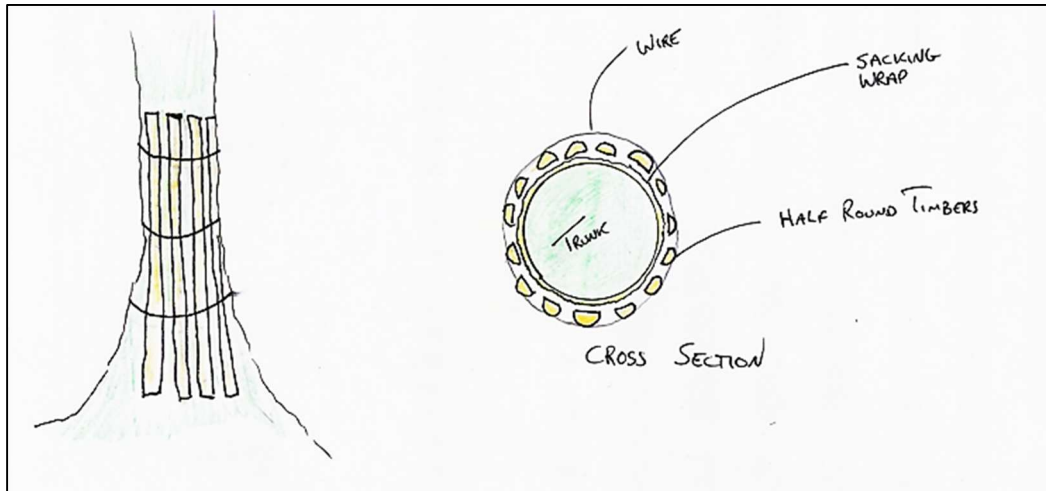
7.0 INSTALLATION OF TEMPORARY GROUND PROTECTION

- Temporary protection is likely to be required for the construction of the no dig path over the Root Protection Area of T28, although that should be rolled out on the surface being created. In all cases, the objective should be to avoid compaction of the soil and crushing injuries to the roots which can arise from even a single passage of a heavy vehicle, especially in wet conditions.

Method Statement Ground and Stem Protection

1. A site meeting should be arranged between the Site Manager and the PA to discuss the requirement.
2. Temporary ground protection is to act as a load spreader to avoid soil compaction and compressive root injury.
3. The load spreaders intended for use must be adequate for the loads intended and agreed with the PA in writing prior to commencement of works.
4. Where construction works or temporary access is justified within the RPA, and is highlighted within an approved AMS, this should be facilitated by a set-back in the alignment of the barrier fencing.
5. The Tree Protective Barrier Fencing may be set back the minimum amount required for the duration of the works and to the satisfaction of the PA.
6. Temporary ground protection must be installed over the exposed Root Protection Area (RPA), to act as a load spreader to avoid soil compaction and compressive root injury.
7. Laying the ground protection material over the exposed RPA should be carried out immediately after the set back in the barrier fencing is completed and prior to the onset of any works and preferably during dry weather.
8. Take care not to damage any part of the tree stem or branches. Select plant or equipment that is of a suitable height to prevent the necessity for pruning. Where conflict still exists, tie back branches in preference to pruning where possible or prune in accordance with an approved ³ tree surgery schedule.
9. Install stem protection where necessary in accordance with Figure 1. PA to assess and advise.
10. In all cases, the objective should be to avoid compaction of the soil and crushing injuries to the roots which can arise from even a single passage of a heavy vehicle, plant or equipment, especially in wet conditions.
11. A product such as Trackmats or a similar product should be used which must be agreed with the Project Arborist. The ground protection might comprise of one of the following: -
 - ✓ For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geotextile membrane.
 - ✓ For pedestrian-operated plant up to a gross weight of 2-ton gross weight, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150 mm depth of woodchip), laid onto a geotextile membrane.
 - ✓ For wheeled or tracked construction traffic exceeding 2-ton gross weight, an alternative system (e.g., proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with an engineer and Arboriculturist, to accommodate the likely loading to which it will be subjected.
12. Laying the ground protection layers should be done in a forward working fashion to avoid compaction so any vehicle involved in the process will always be situated on top of the ground protection.
13. Removal of the ground protection at the end of the construction phase should also be done in a reverse working fashion.
14. Stem protection should be removed carefully avoiding damage to the bark.
15. Such a set-back in the alignment of fencing must be reinstalled immediately following completion of the works in accordance with the Tree Protection Plan and under the guidance of the PA.
16. PA to sign off the activity with the LPA.

Figure 1



7.1 Installation of Services and Specialised Trenchless Techniques

- There are no obvious conflicts between services and retained trees or hedges when reviewing the plans below. However, if this were to change, the following applies.

- JFH5H_UWN_00L_Proposal_3 (Hollies 4).pdf
- M2UTIL-JMS-EL-MUN3114-DR-W-0010.pdf
- UWN_00K Proposal Issue 1 (Cedars 3).pdf
- UWN_00M Proposal Issue 1 (Cedars 4).pdf
- WMR0003012.001.01.pdf

Mechanical trenching for the installation of underground apparatus and drainage severs any tree roots present and can change the local soil hydrology in a way that adversely affects the health of the tree/s.

Mechanical Trenching

Mechanical trenching for the installation of underground apparatus and drainage severs any tree roots present which may adversely affect the health and stability of the affected tree/s. Care should be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs.

Where apparatus is to pass, detailed plans showing the proposed routeing should be drawn up in conjunction with the PA. In such cases, trenchless insertion methods should be used (See Table 3 below), with entry and retrieval pits being sited outside the RPA, if roots can be retained and protected. Hand excavation might be acceptable for shallow service runs.

Trenchless Technology

Where arboricultural constraints present themselves, as is the case here, no-dig subterranean construction is clearly the preferred option, whereby underground ducts or cables can be laid beneath the root-plate of trees using alternative methods to open excavation and. (Refer to Table 3 below taken from the BS 5837) Such alternatives would include....

- (1) Impact moling.
- (2) Surfaced launched directional drilling.

- (3) Thrust boring.
- (4) Pipe ramming.

Impact moling is perhaps the most common technique where a percussive mole (soil displacement hammer) is launched from an excavation pit to displace the soil and form a bore. The new conduit is normally drawn in behind the mole or pulled back into the bore using the hammers reverse action. Pneumatically driven moles, in which the soil is displaced by the action of a percussive piston, have been developed in the range 30 – 180-mm diameter for a single operation, with repetitive multiple passes to achieve 200 – 250-mm diameter. Utility companies and their contractors use moles daily to lay new or replace existing services usually up to about 63-mm diameter. However, larger bores are also common laying pipes up to 180-mm.

Alternatives to Trenchless Technology

Excavating trenches using hand digging methods close to trees is an accepted alternative providing roots above 50-mm are not severed or damaged in the process. Services may be installed beneath the web of tree roots although digging is painstakingly slow and laborious. This approach usually demands the onsite presence of an Arborist to oversee the day to day digging which often becomes a condition of planning. It is unlikely this method would prove a viable alternative due to the length of the intended route and cost implications associated with labour and a supervising arborist. The use of an Air Spade is advisable and maybe requested by the PA where ground is difficult and when many roots are present

Arboricultural Method Statement – Services open trench.

1. The Client is to mark out the proposed route of the service runs clearly, using flu marker paint or other system, for inspection by the PA prior to any works commencing.
2. Service route to be located outside the RPA where possible.
3. PA to supervise the entire operation.
4. PA to provide toolbox talk to the engaged Contractors undertaking the works immediately prior to commencement of works.
5. Tree Protective Barrier Fencing to be offset just sufficiently for the works to be undertaken and immediately prior to the works.
6. The trees crowns and stem should be protected from possible collision damage and included within the area protected by the tree protective barrier fencing if possible. if not, tying back branches or pruning and stem protection may be necessary.
7. Install stem protection where necessary in accordance with Figure 1. PA to assess and advise.
8. Any proposed tree surgery works must be scheduled by the PA and presented to the LPA for approval prior to commencement.
9. Ground plates to be installed where needed, approved and signed off by the PA.
10. Contractor must carry a spill kit and deal with any oil or fuel leaks promptly and report them to the PA and Site Manager.
11. If trench excavation is preferred, it must be carried out by hand, using hand tools only, taking care not to damage roots. This is only acceptable in some circumstances over short distances and where conditions are suitable. The air spade or air vac is the preferred option.
12. Roots above 50-mm diameter must be retained undamaged.
13. The use of an Air Spade is advisable and maybe requested by the PA where ground is difficult and when many roots are present. when using this method –

Services using Thrust Boring

14. The Client is to mark out the proposed route of the service runs clearly, using flu marker paint or other system, for inspection by the PA prior to any works commencing.
15. Service route to be located outside the RPA where possible.
16. PA to supervise the entire operation.
17. PA to provide toolbox talk to the engaged Contractors undertaking the works immediately prior to commencement of works.
18. Tree Protective Barrier Fencing to be offset just sufficiently for the works to be undertaken and immediately prior to the works.
19. The trees crowns and stem should be protected from possible collision damage and included within the area protected by the tree protective barrier fencing if possible. if not, tying back branches or pruning and stem protection may be necessary.

20. Install stem protection where necessary in accordance with Figure 1. PA to assess and advise.
21. Any proposed tree surgery works must be scheduled by the PA and presented to the LPA for approval prior to commencement.
22. Ground plates to be installed where needed, approved and signed off by the PA.
23. Contractor must carry a spill kit and deal with any oil or fuel leaks promptly and report them to the PA and Site Manager.
24. Type of installation method must be approved by the PA.
25. Location of launch and retrieval pits to be agreed with the PA which must be outside of any RPA.
26. Set-back in alignment of Tree Protective Barrier Fencing to be agreed and supervised by the PA.
27. Ground plates to be installed were needed, approved and signed off by the PA.
28. Works to be supervised by the PA and reported on through the watching brief process.
29. Realignment of fencing and removal of ground plates to the satisfaction of the PA.
30. Tree Protective Barrier Fencing to be repositioned in its correct location immediately upon completion of the works and to the satisfaction of the PA.
31. All the works must be to the full satisfaction of the Project Arborist and signed off under a Watching Brief Scheme with the LPA.

Table 3 – Trenchless Solutions

Method	Accuracy mm	Bore dia. ^{A)} mm	Max. sub. ^{B)} length m	Applications	Not suitable for
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway undercrossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1 200	150	Pressure pipes, cables including fibre optic	Gravity-fall pipes, e.g. drains and sewers ^{C)}
Pipe ramming	≈150	150 to 2 000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling ^{D)}	≈50 ^{E)}	30 to 180 ^{F)}	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5 m

^{A)} Dependent on strata encountered.
^{B)} Maximum subterranean length.
^{C)} Pit-launched directional drilling can be used for gravity fall pipes up to 20 m subterranean length.
^{D)} Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
^{E)} Substantial inverse relationship between accuracy and distance.
^{F)} Figures given relate to single pass: up to 300 mm bore achievable with multiple passes.

GAS

- No obvious conflict with retained trees or hedges.

ELECTRICITY

- No obvious conflict with retained trees or hedges.

WATER MAINS

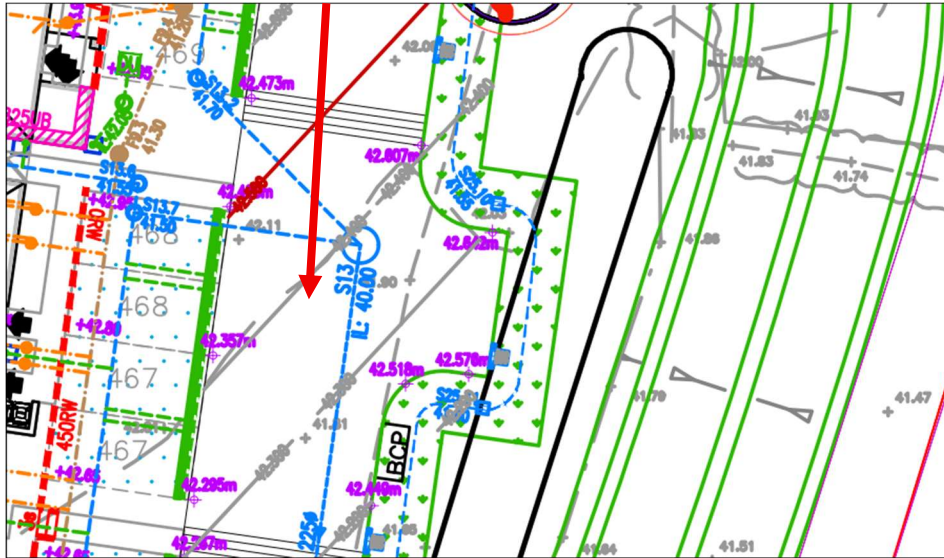
- No obvious conflict with retained trees or hedges.

DRAINAGE, SUDS and SWALES

- The following conflicts occur on the current layout with hedge G167 :-

New development can influence the existing drainage pattern and ground water levels of a site, due to level changes, increased areas of hard surface and new drainage installations. The root systems of mature trees do not adapt as well as younger specimens to alterations to groundwater. Expert advice on both drainage and trees should be taken where groundwater conditions are liable to change.

Bioretention verge encroaches the north section of hedge (G167).



Bioretention verge encroaches the west side of hedge (G167).



SEWER

- No obvious conflict with retained trees or hedges.

SIGNAGE AND CCTV

- No detail provided but unlikely to be required.

VISION SPLAYS

- No obvious conflict with retained trees or hedges.

TOILETS AND SITE ACCOMMODATION

- No detail provided although existing offices and compounds occur across the wider site.

CONTRACTORS CARPARKING

- No detail provided although existing offices and compounds occur across the wider site.

SECURE SITE STORAGE

- No detail provided although existing offices and compounds occur across the wider site.

STORAGE FOR SITE MATERIALS

- No detail provided although existing offices and compounds occur across the wider site.

8.0 EXCAVATIONS

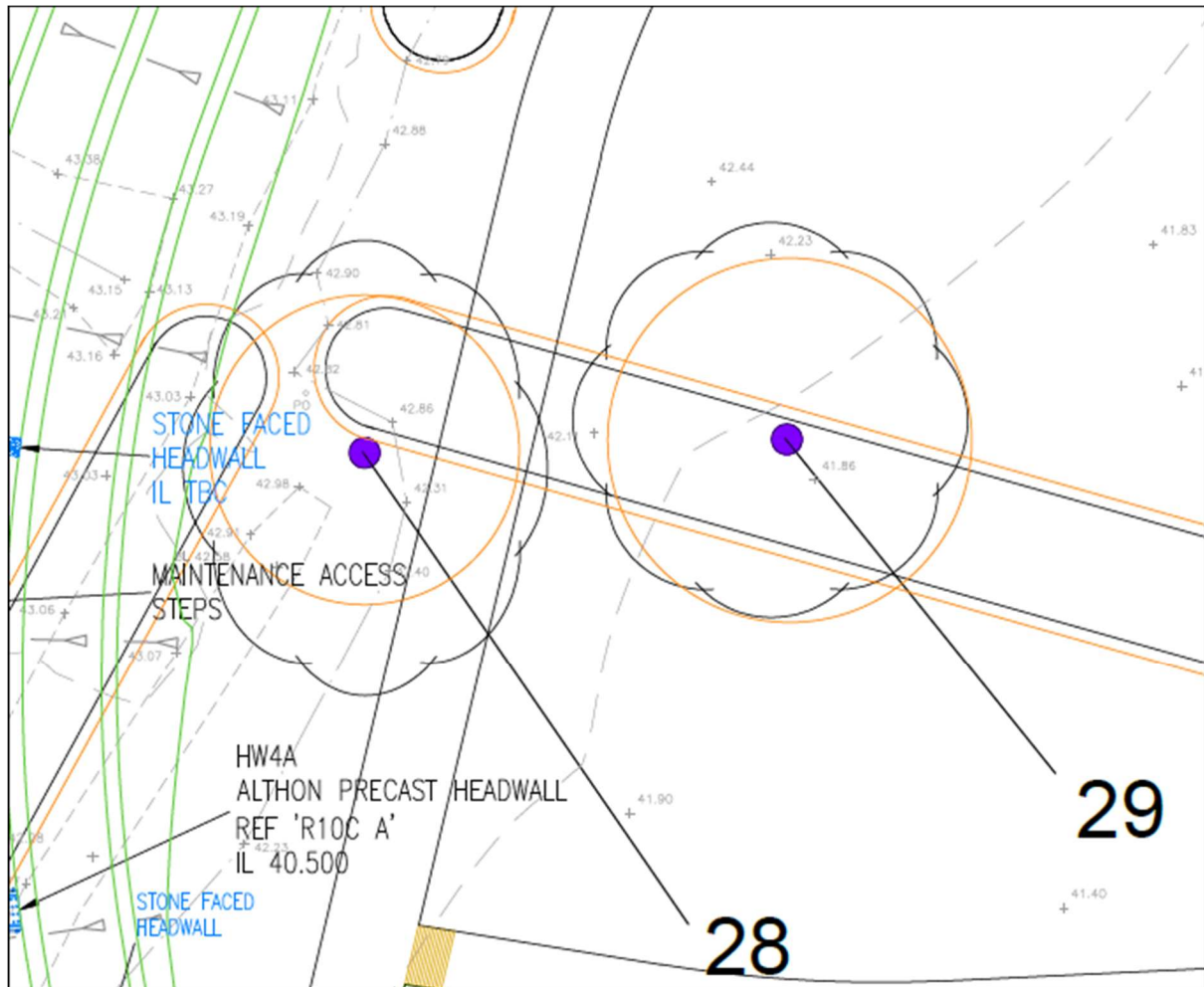
- No obvious conflicts with retained trees or hedges.

9.0 INSTALLATION OF NEW HARD SURFACING – MATERIALS AND DESIGN CONSTRAINTS

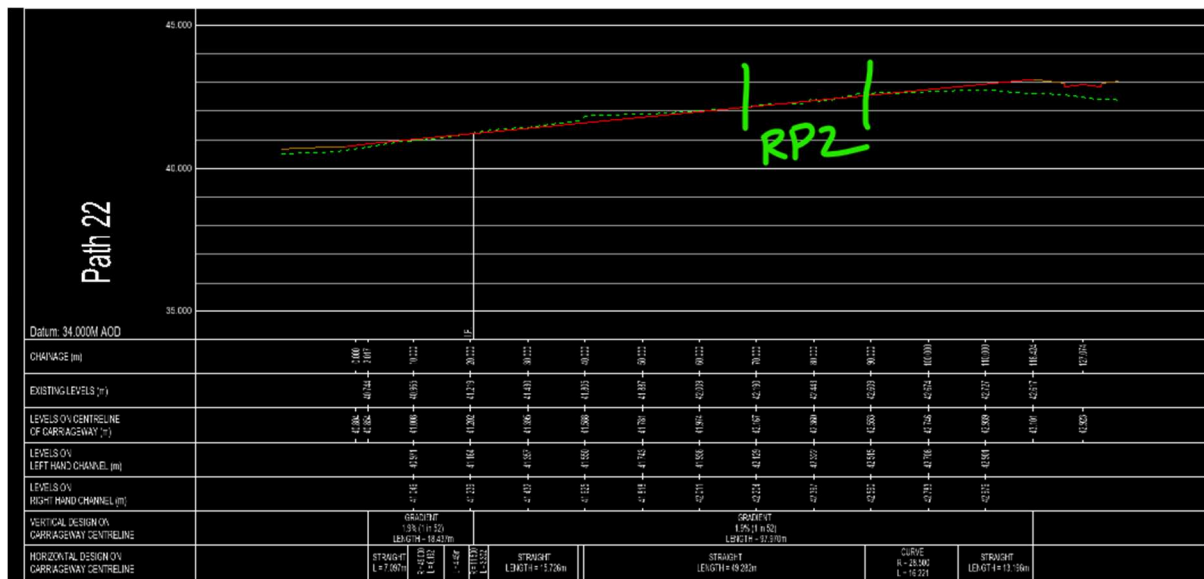
- Laying of footpaths and access roadways across or through RPA' s is particularly damaging to trees. The following trees and groups are affected – T28.

IMPORTANT NOTE. This path construction has been considered in the previous Arboricultural Method Statement for the adjoining phase of development - Cedars 3 (22-036 Great Milton_Cedars 3_ AMS & TPP_Rev 1 July_2024_AMBLER-SJ). The relevant section is reproduced, below.

Tarmacadam path through Root Protection Area of T28, must be of raised no dig construction.



The Engineers (Pheonix Design) levels show the path through the RPA ('RPZ') of T28 at existing ground levels.



Tree friendly construction techniques are acceptable providing the existing ground levels are not lowered and the following design principals and working method are engaged. These level changes are significant and should be avoided within the RPA. The following advice is given: -

DESIGN RECOMMENDATIONS FOR PEDESTRIAN / CYCLE PATHS

1. The design recommendations are taken from ⁵ Arboricultural Practice Note 12 & ⁶ Arboricultural Association Guidance Note 12 and should not require excavation or soil stripping into the ground, within the RPA – in other words, NO DIGGING. Scraping is not permitted unless using hand tools to remove turf or vegetation layers.
2. The structure of the hard surface should be designed to avoid localised compaction by evenly distributing the loading over the track width.
3. A geotextile should be used at the base of construction to help prevent pollution contamination of the rooting area below.
4. Permeable hard surfacing can result in soil volume moisture content remaining at or near field capacity for long periods. Where there is a risk of waterlogging, the design should incorporate appropriate land drainage.
5. Land drainage within the RPA should be designed to avoid damage to the tree and the soil structure, e.g., sand slitting formed by compressed air soil displacement with the slits set radially to the tree.
6. The hard surface should be resistant to or tolerant of deformation by tree roots and should be set back from the stem of the tree and its above-ground root buttressing by a minimum of 500-mm to allow for growth and movement. Resulting gaps may be filled using appropriate inert granular material.
7. When designing the hard surface, account should be taken of finished levels in relation to adjacent structures, and links to existing vehicular crossovers.
8. Construction traffic must not use these routes even temporarily.
9. The excavation needed for the placement of kerbs, edgings, and their associated foundations and haunchings can damage tree roots. Within the RPA, this should be avoided either by the use of alternative methods of edge support such as above-ground peg and board edging, sleepers (pinned in place where required) or other non-invasive ground-contact proprietary products.
10. The soil structure including the area beneath the proposed new hard surface should be protected from compaction during installation. This may be achieved by a) the use of temporary ground protection to safeguard the working area: b) constructing the new surface with machinery working forward from the surface as it is constructed (known as "rolling out").
11. Where herbicide is used to control vegetation prior to construction of hard surfacing, the manufacturer's guidance should be strictly followed, and care should be taken to avoid any damaging effects on trees or other vegetation to be retained.

NOTE - The use of appropriate geotextiles can provide a barrier that inhibits weed growth but allows water and gases to pass freely.

12. The ground should not be skimmed to establish the new hard surface at the former ground level. Loose organic matter and/or turf should be removed carefully using hand tools. The new surface should then be established above the soil.
13. Raising levels should be achieved by use of a granular material which remains gas- and water-permeable throughout its design life.
14. Due to the highly alkaline leachate produced during the curing of wet concrete, concrete should not be poured within the RPA unless an impermeable liner has been installed.
15. New permanent hard surfacing should not exceed 20% of existing unsurfaced ground within the RPA.
16. Construction should incorporate two main components:
 - A synthetic load spreading material.
 - A no-fines aggregate sub-base.

NOTE - a **geotextile**, which is usually used to prevent layers of different materials mixing while allowing water to pass through, is not designed to be load bearing. 'Load Spreading' materials, for pedestrian usage paths are synthetic grids (two dimensional) designed to support the path on soft ground by distributing the load over a larger area than would normally occur.

17. When placed on a **two-dimensional grid**, appropriate, no-fines granular sub-base material penetrates the mesh, but is unable to pass through it, forming a positive interlock (Figure 4). This interlock between aggregate and grid provides a reinforced platform

⁵ Arboricultural Practice Note 12. Arboricultural Advisory Information Service. Through the Trees to Development. Derek Patch and Ben Holding

⁶ Arboricultural Association, Guidance Note 12. The Use of Cellular Confinement Systems Near Trees: A Guide To Good Practice. Ben Rose

and efficient load spread into the ground over a wider area. A suitable geogrid/aggregate combination constructed with the grid under tension should prevent rutting of the ground beneath construction.

NOTE – two dimensional grids are not to be used where vehicles access is required.

18. The granular sub-base material should have a 'no-fines' content which means that even when it is compacted it should be freely draining and will allow oxygen to diffuse into, and damaging gases (e.g., carbon dioxide and methane) out of the soil.

NOTE - For site-specific prescriptions and material specifications, advice should be sought from a qualified geotechnical or civil engineer who should work in consultation with an Arboriculturist.

Figure 4 – Two-Dimensional Load Spreader

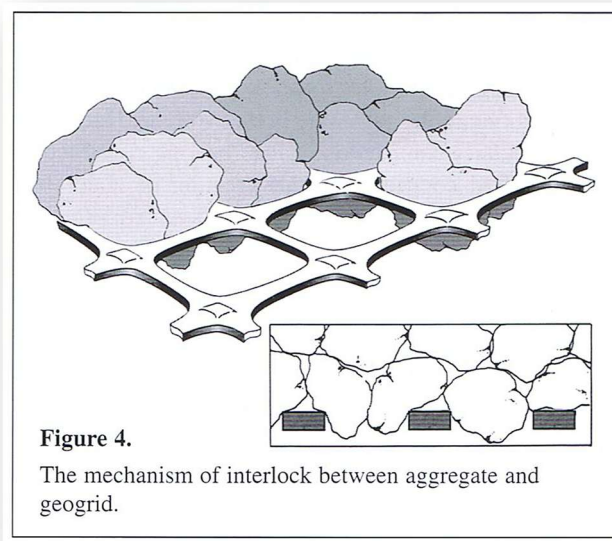
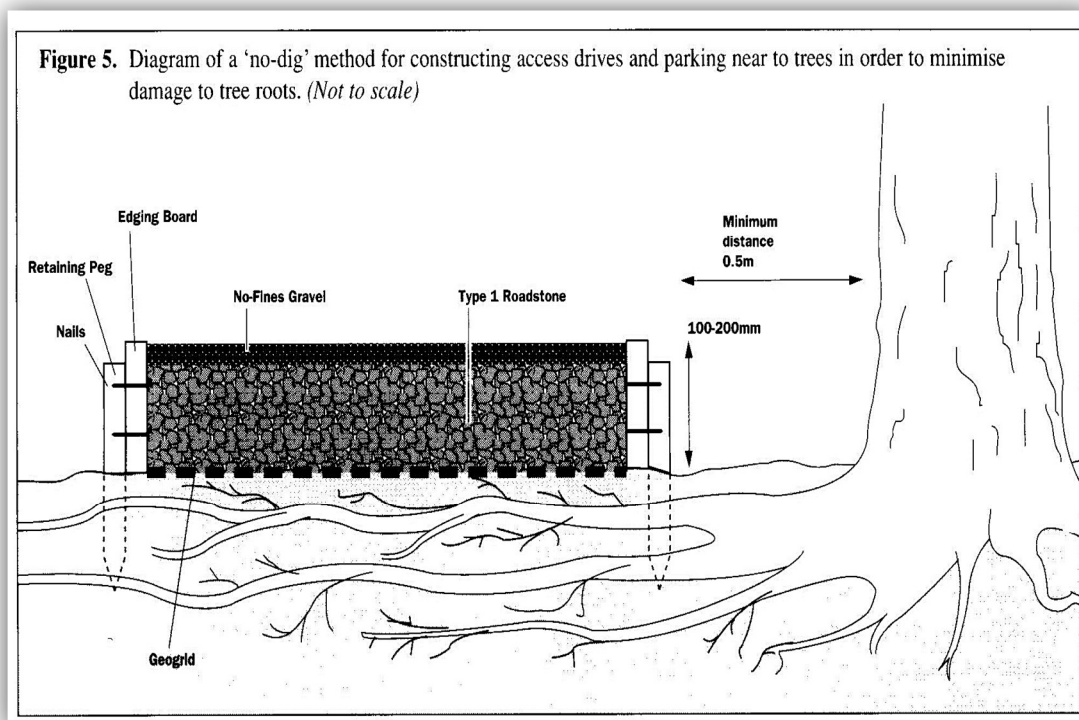


Figure 5 – No Dig Method of Construction



Method Statement for Constructing Access within RPA

1. The Client is to mark out the proposed route of the paths clearly, using flu marker paint or other system, for inspection by the PA prior to any works commencing.
 2. Path to be located outside the RPA where possible and limit the incursion to <20% of the RPA.
 3. PA to supervise the entire operation.
 4. PA to provide toolbox talk to the engaged Contractors undertaking the works immediately prior to commencement of works.
 5. Tree Protective Barrier Fencing to be temporarily offset just sufficiently for the works to be undertaken and immediately prior to the works.
 6. The trees crowns should be protected from possible collision damage and included within the area protected by the tree protective barrier fencing.
 7. Ground plates to be installed where needed, approved and signed off by the PA.
 8. Install stem protection where necessary in accordance with Figure 1. PA to assess and advise.
 9. Any proposed tree surgery works must be scheduled by the PA and presented to the LPA for approval prior to commencement.
 10. Contractor must carry a spill kit and deal with any oil or fuel leaks promptly and report them to the PA and Site Manager.
 11. Construction should ideally be undertaken between May and October when the ground is driest and least prone to compaction.
 12. Take care when constructing not to compact the soil or cause root damage. There **must not** be any movement within the root protection area before the ground is protected by the load spreader and the sub-base. Then movement must only be along the construction.
 13. Kill ground vegetation using a translocated herbicide such as glyphosate⁷. After 7-10 days, gather up the dead organic material: this will prevent the build-up of anaerobic conditions beneath the construction, which might otherwise occur as vegetation begins to decompose.
 14. Remove major protrusions such as rocks and tree or shrub stumps (stumps should be ground out rather than excavated to minimise soil disturbance).
 15. Fill major hollows with sharp sand. DO NOT GRADE-OFF HIGH SPOTS
 16. Lay a geotextile membrane over the whole of the path area prior to the application of the two-dimensional load spreader.
 17. Lay the 'synthetic geogrid directly onto the geotextile.
 18. Secure the synthetic load spreader under tension using long pins driven into the ground through the grid.
- NOTE-** before driving pegs or pins into the ground, check for underground services that could be damaged.
19. Construct an edging which is secured through the load spreader so that pressure on the running surface will force the edging outwards and so increase the tension on the load spreader. With boards or similar attached to pegs driven into the ground through the geogrid. Pegs should be long enough to give sufficient support for the construction.
- NOTE -** before driving pegs or pins into the ground, check for underground services that could be damaged.
20. Cover the load spreader with a minimum of 100-mm of no-fines aggregate. This should not be tipped straight onto the geogrid but should be placed at one end and then pushed onto the grid so that machinery moves on the spread sub-base, not directly on the geogrid and not on the ground either side of it. Begin construction at the entrance to the site and 'roll-out' the sub-base in front of the machinery which always remains over the sub-base. The machinery used should not exceed 2-ton in weight.
 21. Compact the sub-base to ensure binding and to minimise future rutting.
 22. Place a further geotextile over the sub-base to prevent dry bedding materials or surfacing merging with the sub-base.
 23. Place the final surface which is likely to consist of gravel or tarmac, although paving slabs and brick pavements may be acceptable, provided they are dry bedded on the sub-base and the joints are not sealed with grout, to allow for infiltration of water and gaseous diffusion.
 24. Tree Protective Barrier Fencing to be repositioned in its correct location immediately upon completion of the works and to the satisfaction of the PA.

⁷ Pesticides can be dangerous...refer to manufacturers instructions and follow the advice on the label carefully. Pesticides should only be used by competent personnel.

25. All the works must be to the full satisfaction of the PA.

10.0 SPECIALIST FOUNDATIONS

- Not applicable.

11.0 BOUNDARY TREATMENTS FENCING

- No obvious conflicts between boundary finishes and trees or hedges, but should this change then the following applies:-

Method Statement - Boundary Fencing

1. A posthole auger will be necessary to cut the postholes and care should be taken when using any mechanical driven rig within the RPA.
2. The auger operation should limit the diameter of the holes to 200-mm or below, with a minimum distance between the edge of each pile of 1000-mm.
3. Auguring must avoid the Mechanically Effective Root-plate Radius (MERR) of any retained tree and these distances must be provided by the Arborist whilst on site.
4. The barrier fencing should be altered to accommodate the works immediately prior to the operation and under the supervision of the PA.
5. Where using a rig, the auger operation should be carried out whilst on top of 'load spreaders' sufficient to support the weight of the plant to protect the RPA from compaction and the underlying roots from compressive injury, this protection should include tracking inwards and outwards from the RPA.
6. Consider the height of the Rig to prevent damage to overhanging branches.
7. Protect the tree stem as shown in Figure 1 where there is a potential conflict.
8. The augured excavated material shall be collected carefully and removed from the RPA.
9. Take precautions to prevent soil contamination, use a non-permeable sheet below the rig during its operation to prevent leaking fuel and hydraulic oil onto the soil.
10. Spill kits should be carried and in the event of any contamination, it shall be collected immediately and disposed of in a proper manner and the Arboriculturalist and Site Manager informed.
11. Apply concrete to 'non-permeable sleeved' augured holes to prevent leachates entering the soil and great care shall be taken not to spill and contaminate the soil.
12. The Project Arborist shall be informed of the dates of these operation and will attend site and provide a toolbox talk and supervise the work.
13. Works must be carried out to the satisfaction of the PA.
14. Photographic evidence will be taken to update the LPAs Tree Officer as part of the Watching Brief Condition.
15. Upon completion of the works the Tree Protective Barrier Fencing must be immediately reinstalled in compliance with the Tree Protection Plan.
16. PA to sign off the reinstatement of the Tree Protective Barrier Fencing.

12.0 PREPARATORY WORKS FOR NEW LANDSCAPING

- We are provided with a basic landscape plan 'P21-3058_01AG-Site Layout Hollies 4' to comment on. It's noted that the 'indicative tree planting' does not include species or variety information and therefore we are unable to comment on suitability or characteristics of those trees in the proposed locations.
- Trees planted to the front of plots 430-441, 883, 480 in the highway verges are south of these properties with relatively small front gardens and may overtime become an issue with shading. Tree volumes for trees in the street-scene will also be key and discussed below.

We have also offered some general advice relating to landscaping near retained trees which may be helpful for consideration when implementing landscape work.

The RPAs of retained trees should be excluded from landscaping where possible. Top soiling over and above the root-plate of trees is detrimental to their health even just 100-mm or so and where turf is added. Planting into the RPA is also damaging to roots.

Laying turf or grass seeding within the RPAs of trees is generally frowned upon and should be avoided. Many LPAs do not allow it, whilst some do. Where it is considered important for turfing or grass seeding within a landscape plan, the following method must be followed: -

Method Statement for Turfing or Seeding

1. Levels should not be altered.
2. Any existing ground vegetation should be killed using an appropriate herbicide.
3. Dead vegetation may be raked or skimmed off using hand tools.
4. Apply a fine layer of sandy compost not exceeding 50-mm depth.
5. Seed or turf may be laid directly onto this.
6. Care must be taken to avoid compaction so ideally done during dryish conditions avoiding working on wet and saturated soils.
7. The use of fertilisers must be avoided.
8. Exposed ground within the RPA must be protected where wheelbarrows or mechanical barrows or small plant is used, working off load spreaders that are suitable to support and distribute the load.
9. Any works within the RPA must be supervised by the Project Arborist.

The general treatment of areas around newly planted and existing trees should allow for adequate infiltration of water and free gas exchange, reduction of water evaporation and the retention of an open soil structure to encourage root growth. Care should be taken to ensure that grass or weed growth does not compete with young root growth by intercepting available water supply. Care should-also be taken to avoid the risk of damage to the stems of young trees from future strimming or mowing operations. An area with a radius of at least 500-mm from the stem of newly planted trees should therefore be kept free from competing vegetation by chemical weed control or by the more environmentally friendly option of mulching.

Soil Volumes for Trees

As a general rule the following loamy soil volumes should be provided for newly planted trees. Multiple factors need consideration including climate, size, species, proposed management and soil type.

- Small sized tree (Mature size with a stem diameter of <150mm = >10m³
- Medium sized tree (Mature size with stem diameter <300mm) = >20m³

- Large sized tree (Mature size with stem diameter >450mm) = >30m³

NOTE - Soft landscape finishes, including mulch and cultivated beds, will generally provide more favourable conditions for young tree establishment than most hard surfaces or grass. The use of ground-cover shrubs with an appropriate organic mulch is particularly beneficial: this treatment suppresses weeds, reduces maintenance, discourages intrusion, and maintains a permeable open soil structure.

Soil Compaction and Remediation Measures.

Soil that has been compacted will not provide suitable conditions for the survival and growth of vegetation, whether existing or new, and is a common cause of post-construction tree loss on development sites. Compacted soil will adversely affect drainage, gas exchange, nutrient uptake, and organic content, and will seriously impede or restrict root growth. The risk of soil compaction is greatest in soils with significant clay content and in wet conditions. It can result from temporary or short-term loadings, such as the passage of a single vehicle, or from longer-term construction activities, including materials storage.

Soil compaction should be avoided in RPAs and areas where new planting or seeding is proposed which contain suitable ground conditions (fertile soil). Where soil compaction has occurred in RPAs or proposed planting areas, arboricultural advice should be taken before carrying out any remedial works. Remedial works may include sub-soil aeration using compressed air, and the addition of other materials, preferably of a bulky, organic nature (but excluding peat), to improve structure.

Use of Mulch.

Open soil and shrub planting areas around newly planted trees should be mulched to inhibit weed growth, reduce groundwater evaporation, resist, and mitigate soil compaction and reduce maintenance requirements, whilst allowing gas exchange and water penetration to roots. The mulch material should be weed-free, easy to apply, containable within the area of application and readily available. The choice of material will be informed by local availability of materials, site characteristics and aesthetic requirements. The mulch should be periodically replenished as it decomposes so that it does not become depleted, and ideally when the soil is warm and moist.

The materials that may be used for mulching include coarsely divided plant matter, such as well-composted wood chip, pulverized bark, leaf mould or green waste conforming to PAS 100, and these may be combined with well-rotted animal manure. If the sole intention is to conserve moisture, a layer of gravel or well-secured sheets of material such as permeable geotextile fabric may be used and may be covered for cosmetic purposes. Any such sheets should be maintained to avoid damage to the tree (e.g., by clogging, weed growth, restriction of air movement or constriction of the stem).

The mulched area should extend over as much of the root system as can be allowed by other site-usage requirements. The depth of organic mulch should not be so much as to inhibit aeration of the root system (normally no more than 100 mm). The area around the tree should be well-watered prior to the application of mulching material and the mulch should be periodically replenished as it decomposes, so that it does not become depleted.

Mulches should be kept away from direct contact with the bark of the stem, or of major roots since this might encourage infection by pathogens by maintaining wet conditions.

NOTES.

1. Mulches that retain water encourage the development of roots near the soil surface and within the mulch itself. This can become a disadvantage owing to desiccation if the mulch is removed or not replenished.
2. Although, by improving the soil texture and acting as a buffer for rainfall, mulches generally help to prevent extremes of soil wetness and dryness, they can prolong waterlogging on sites where drainage is seriously impeded. This in turn can harm tree roots and make them more susceptible to certain pathogens such as *Phytophthora* spp.
3. Further guidance on mulching is given in BS 3998:2010.

13.0 GENERAL MATTERS

To prevent damage to the trees, including their roots, within the fenced area (RPA) there must be no...

- φ Alteration of ground levels, including soil stripping.
- φ Installation of drainage or services using conventional open trenching methods which would not be in accordance with BS:5837. (Any works should be in accordance with the National Joint Utilities NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees Volume 4)
- φ Excavation of any kind.
- φ Storage of any materials or equipment, even on a temporary basis.
- φ Storage of oil, bitumen, cement, or other harmful materials, mixed or discharged within 12-m of the trunk of any retained tree and making further allowances for any slope of the ground so prevent running contamination. Phytotoxic materials would include any mineral oil, fuels, cement mortar washings concrete washings, mortar.
- φ Fires must not be lit beneath or within 12-m of any tree canopies.
- φ Site operations such as deliveries, site machines, crane jibs etc should be organised to avoid damaging the trunk or crown of trees. Where this conflict is unavoidable then facilitation pruning should be carried out in advance, rather than after damage has occurred. This may also be required to allow demolition operations.
- φ Mechanical cultivation of the soil as part of landscaping operations.

Planning of site operations should 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 encountering the RPA, trunks stems or branches of any retained trees. Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any movement of plant or machinery in proximity to trees should be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is always maintained. Access facilitation pruning should be undertaken where necessary to maintain this clearance if in accordance with good arboricultural practice (see note 2 below).

NOTES.

1. In most instances, local planning authority consent for pruning will be required.
2. Fires on sites must be avoided.
3. Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of the RPAs.
4. It is both good practice and, in many cases, a regulatory requirement to maintain existing groundwater conditions within, and reduce run-off from, a development site. This can be achieved, for example, using permeable hard surfaces and techniques associated with sustainable urban drainage systems (SUDS). Such techniques can be designed and implemented to benefit both existing and new trees. (SUDS water might need to be treated/filtered and/or tree rooting areas protected from direct contamination in risk areas.)

14.0 AUDITABLE SYSTEM OF ARBORICULTURAL SITE MONITORING

Including a schedule of specific site events requiring input or supervision.

Successfully retaining trees during development depends on several controls being in place. A determination and willingness by all parties is required but primarily the Site Manager will have overall responsibility to ensure that control measures are observed. Communication early in the procedure between the Client, Site Manager, Arborist and Local Authority Tree Officer or other appointed staff is fundamental in maintaining a level of care.

The engagement of a Project Arborist is probably the single most essential component towards ensuring success. This should involve regular 'drop-in' visits by an appointed Arborist who will be responsible for monitoring tree protection measures and offer advice when needed.

A line of communications must be in place between Project Arboriculturist, Site Manager, and Local Planning Authority Tree Officer as a minimum requirement. Details are provided below. Should any queries arise in relation to the protection of trees on this development site then please contact the Arborist on call, during normal office hours.

Such visits must be recorded to form an auditable trail and regular Reports submitted to the Local Planning Authority. The number of visits will be dependent on the type and density of the development and the matters requiring arboricultural input. The number of visits required may also be stated or altered by the LPA at any time during the permitted development.

The Site Manager (SM) must make themselves available for a meeting with the PA during the first Watching Brief (WB) visit. The SM must have read the document prior to the meeting and prepare any questions. During this initial meeting, the PA will point out the Arboricultural Watching Brief system and the site-specific Arb related works section that require specific supervision by the PA, along with the Tree Protection Plan. The SM will be required to sign and date a hard copy of the Arboricultural Method Statement with a dual signature page stating they have fully read, understood, and will implement the recommendations of the document. A copy will be appended to the first Arboricultural Watching Brief report and stay there for future reports; the SM will retain a signed copy on site.

14.1 Schedule of Watching Brief Visits

1. At the very start of the site set up, and prior to the commencement of any construction or movement on site, the Project Arborist (PA) will attend site and provide the Site Manager with a toolbox talk on the Arboricultural Method Statement (AMS), will outline the role of the PA, identify all the key moments and specific arboricultural events within the AMS, and explain the mandatory reporting process to the Local Planning Authority (LPA). Should the Site Manager be replaced or temporarily substituted, then the process must be repeated, and it is the duty of the client to inform the PA when this occurs.
2. The PA should attend site and mark out the Tree Protective Barrier Fencing.
3. The PA should attend site and assess the Tree Protective Barrier Fencing is fit for purpose and sign-off with the LPA.
4. The Project Arborist should attend site and perform a watching brief visit on a weekly basis for the first two months and then fortnightly thereafter unless specified differently by the LPA.
5. The PA at each visit will assess the retained trees and their protection for compliance with the Tree Protection Plan.
6. The PA must supervise all works that occur within or close to any RPA.
7. The suitability of the root protection fencing will be assessed at each visit.
8. Additional visits will occur at scheduled specific events as listed above and the PA MUST receive 7 days' notice in writing of these events so they can be calendared in.
9. Watching Brief Reports will be submitted to the LPA at the end of each month detailing the date of the visit, list concerns, recommended remedial action, sign off remedial action where complete and will include photographic evidence.
10. The Watching Brief Report will relay, communicate and update the LPA of the standard and success of arboricultural care on site.
11. Additional visits should occur at scheduled specific events as mentioned in Item 15.0 below.

15.0 SITE SPECIFIC ARBORICULTURAL EVENTS

1. Tree pruning/felling assessment and schedule of works
2. The marking out of the RPAs by the PA
3. Erection of Tree Protective Barrier Fencing, PA to check for conformity and sign off with the LPA.
4. The positioning, installation, and suitability of ground protection where necessary.
5. Working within the Special Precautionary Areas – path within RPA of T28 (Refer to Tree Protection Plan at rear of Report.

15.1 Communications List

Mrs. Shona Carle (Woodlands Officer) & Richard Baron (Arboricultural Officer)

Newport City Council

Environment & Economy Department

Civic Centre

Newport

NP20 4UR

Email - shona.carle@newport.gov.uk

- Richard.Baron@newport.gov.uk

Telephone - 01633 232191

Mr. Vaughan Lewis (Principal Arborist)

Steve Ambler & Sons Tree Specialists Ltd

Email - vaughan@steveamblertrees.com

Mobile - 07961322908

Mr. Scott Ambler (Project Arborist)

Steve Ambler & Sons Tree Specialists Ltd

Email - scott@steveamblertrees.com

Mobile – 0777 2998 734

Technical Project Manager - Anthony Smith

Redrow Homes Ltd

Telephone: 02920 549103

Mobile: 07979101156

Email: anthony.smith@redrow.co.uk

16.0 LEGAL CONSTRAINTS

Tree Preservation Orders and Conservation Area Status in Wales

In Wales, the law on TPOs is in Part V111 of the Town and Country Planning Act 1990 Town and Country Planning (Trees) Regulations 1999. When any tree/s are protected by a TPO or are situated within a Conservation Area, it is an offence (1) cut down (2) uproot (3) top (4) lop (5) wilfully damage or (6) wilfully destruct a tree without the express written permission from the Local Planning Authority (LPA), there are exceptions. An LPA may grant permission, if considered reasonable following the submission of an application for consent to undertake the works, or where in accordance with an Approved Planning Application or under the exemptions within the Town and Country Planning Act 1990 of dead, dying, or dangerous. It is advisable to consult the LPA and an Arborist prior to conducting any tree works under these exemptions.

Felling License

A Felling Licence may be required in certain felling operations, and these are administered by the Forestry Commission where more than five cubic metres of wood are felled in one calendar quarter and when selling more than two cubic metres. There are exceptions and these are in the Forestry Act 1967 and Regulations made under this Act. Contravention of the felling licence controls can incur substantial penalties. Tree felling forming part of a Local Authority Planning Approval is exempt.

The Wildlife and Countryside Act 1981 protects nesting birds and to disturb nesting birds can be a criminal offence. Therefore, caution must be aired if tree works are programmed during the nesting season, between March and August. Should nesting birds be present then all but essential works will be postponed. If in undertaking essential works a nest or nests are found to be present, then further advice will be sought from the Countryside Council for Wales.

Bats...Summary of Current Relevant Legislation

There are some 17 species of bat which are known to breed in the British Isles, all are insectivorous and depend to some extent on habitat in which trees are a significant element. Bats are a protected species and are in decline both globally and nationally. Therefore, they are to be fully considered before any tree work commences and particularly if the trees are mature. If a bat roost is known to be in any tree that is to be removed or worked on, a license must be obtained from the Welsh Assembly Government beforehand.

The European Habitats Directive (passed in 1992) provides the principal legal protection for bats in the UK, and this is currently enacted into British legislation through the Conservation of Habitats and Species Regulations 2010 in England and Wales: The Conservation (Natural Habitats &c) Amendment (No. 2) (Scotland) Regulations 2009 in Scotland: and the Conservation (Natural Habitats &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland. These regulations relate to all animals which are identified as European Protected Species (EPS) which includes all bat species.

The different countries of the UK have domestic legislation which also provides protection (by varying degrees) to bats however, this has been superseded by the Regulations specified above.

Under the Regulations it is illegal to:

- kill, injure or capture a bat
- disturb bats
- damage or destroy a bat's breeding site or resting place (roost)
- possess a bat (live or dead) or offer one for sale or exchange.

This is a simplified summary of the legal position relating to bats and is intended for guidance purposes only. If further assistance is required, the primary legislation should be referred to or legal advice sought.

The legislation makes it an offence to intentionally or recklessly damage, destroy or obstruct access to a site used by bats whether bats are present at the time or not. This can include work on trees whether it is surgery, felling, the covering, or filling of cavities or the installation of rod braces and flexible cable braces, where a bat roost is present.

Where there is a risk bat roosts may be present, it is incumbent upon the owner or manager to commission a specialist bat survey to identify bat roosts before instructing tree surgery to commence. Failure to do so and in the event of disturbing a roost site or injuring any bats is an offence. Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/ 1991 (i.e., £5000 in April 2001) per roost or bat disturbed or killed, or to both.

Statute and Common Law.

A landowner or land manager should be aware that both statute and common law dictates regular inspections of trees on land in their control are necessary where such trees could cause injury or damage in the event they should fall or shed any parts. A person suitably qualified in arboriculture should undertake such routine inspections and any remedial tree works recommended should be carried out within the time constraints specified, to prevent injury or damage occurring. A landowner should retain records of all inspections and any remedial tree works that have resulted from such inspections. Arboricultural Association, the Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire, GL10 3DL. Telephone 01242 522152. www.trees.org.uk are able to provide advice on suitably qualified persons or indeed suitable qualifications a person should hold to undertake qualified inspections.

17.0 LIMITATIONS OF THIS REPORT

It must be stressed that this report is a desktop, pre-development assessment and not a risk assessment or a detailed report on the health and condition of the trees. Tree/s should be subject to regular tree condition inspections and a full tree condition inspection and appropriate management appraisal is strongly recommended and particularly on completion of any development.

The effect this new development may have on localised wind turbulence has not been assessed during this inspection. As trees grow, they respond and mechanically adapt to their surroundings and exposure limits. With the erection of dwellings in close proximity to existing trees, new turbulence is created. The author accepts no liabilities to any failure subsequent upon such new imposed, artificial conditions.

Unless stated in writing, the inspection shall not include any underground parts of the tree. It does not consider **indirect** damage resulting from the extraction of moisture from shrinkable clay soils by tree roots causing **subsidence** or by **heave** occurring through soil rewetting following removal of trees on this site. Such problems are almost entirely restricted to areas of shrinkable clay soils and as I have **not** considered a soil analysis as part of my present brief, this aspect is **not** addressed at this time.

Unless otherwise stated in writing and in the absence of altered circumstances, a report on the health and safety of a tree or trees cannot be relied on after a period of 12 months. Following such a period, a further inspection is required.

Further and more general report limitations are set out in the authors Terms and Conditions and copies are available upon request.

18.0 GLOSSARY OF TERMS

Anchorage: in trees, the holding of the root system within the soil, involving the flow of forces from the stem through the branches of the root system to the cohesive root/soil interface.

Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS)

Assym: This abbreviation means...asymmetric...and refers to the tree having an asymmetric or unbalanced crown. This is usually preceded by a measurement in metres which provides the extent of crown asymmetry and is measured from the centre of the trunk. It may also have a correlation to the lever arm.

Arboriculturist: person who has, through relevant education, training, and experience, gained recognised qualifications and expertise in the management of trees generally and in relation to construction.

Architecture: in a tree, a term describing the pattern of branching of the crown or root system.

Arboricultural Implication Assessment (AIA) study, undertaken by an Arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impact on existing trees that may arise as a result of the implementation of the site layout.

Arboricultural Method Statement: methodology for the implementation of any aspects of development that has the potential to result in loss of or damage to a tree.

Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS)

Bole (trunk): the main stem of a tree below its first major branch

Branch: a limb extending from the main stem or parent branch of a tree

Canopy: the topmost layer of twigs and foliage in a woodland, tree, or group of trees

Construction Exclusion Zone: area based on the RPA (meters as a radial measurement and sometimes a m²), identified by an Arboriculturist, to be protected during development, including demolition and construction work, by use of barriers and/or ground protection fit for the purpose to ensure the successful long-term retention of a tree.

Crown: in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

Heave: in relation to a shrinkable clay soil, expansion due to re-wetting, sometimes after the felling or root severance of a tree which was previously extracting moisture from the deeper layers: also, in relation to root growth, the lifting of pavements and other structures by radial expansion: also, in relation to tree stability, the lifting of one side of a wind-rocked root plate.

Pruning: the removal or cutting back of twigs, branches, or roots: in some contexts, applying only to twigs or small branches only, but more often used to describe all kinds of work involving cutting.

Retained Tree: a tree that has been considered suitable by an Arborist for retention and which during the design stage is selected for retention and incorporated within the development.

Risk: the likelihood of the potential harm from a particular hazard becoming actual harm.

Root Protection Area (RPA): layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m²

Soil heave: *see* heave.

Subsidence: in relation to soil or structures resting in or on soil, a sinking due to shrinkage when clay soils dry out, sometimes due to extraction of moisture by tree roots.

Subsidence: in relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight.

Tree: a woody plant, which typically has a single main stem and, in maturity, attains a height of at least four metres and a stem diameter at breast height of at least 75-mm.

Tree Constraint Plan (TCP): plan prepared by an Arboriculturist for the purpose of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade dominance, etc.

Tree Preservation Order: in Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.

Tree Protection Plan: scale drawing prepared by an Arboriculturist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

Trunk: the single main stem of a tree.

Visual Tree Assessment (VTA): in addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

19.0 REFERENCES

British Standards Institute Publication 'Trees in Relation to Design, Demolition and Construction – Recommendations' 2012

British Standard Recommendations for Tree Work BS 3998: 2010

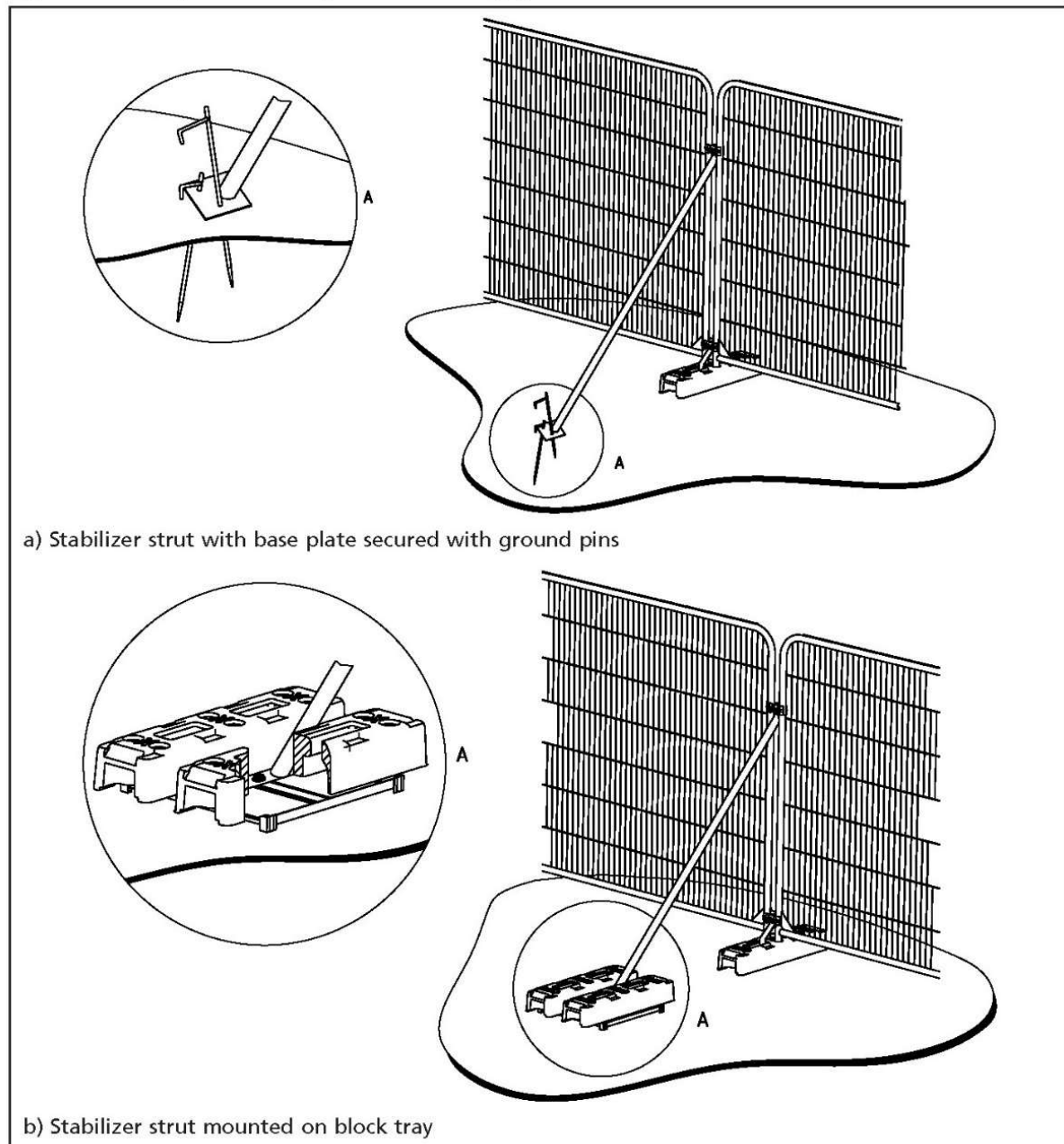
Tree Survey, Categorisation and Constraints Plan (Ambler)

Tree, Removal, Retention, & Protection Plan (Ambler)

Arboricultural Implications Assessment (Ambler)

APPENDIX A - SPECIFICATION FOR PROTECTIVE BARRIER

Figure 3 Examples of above-ground stabilizing systems

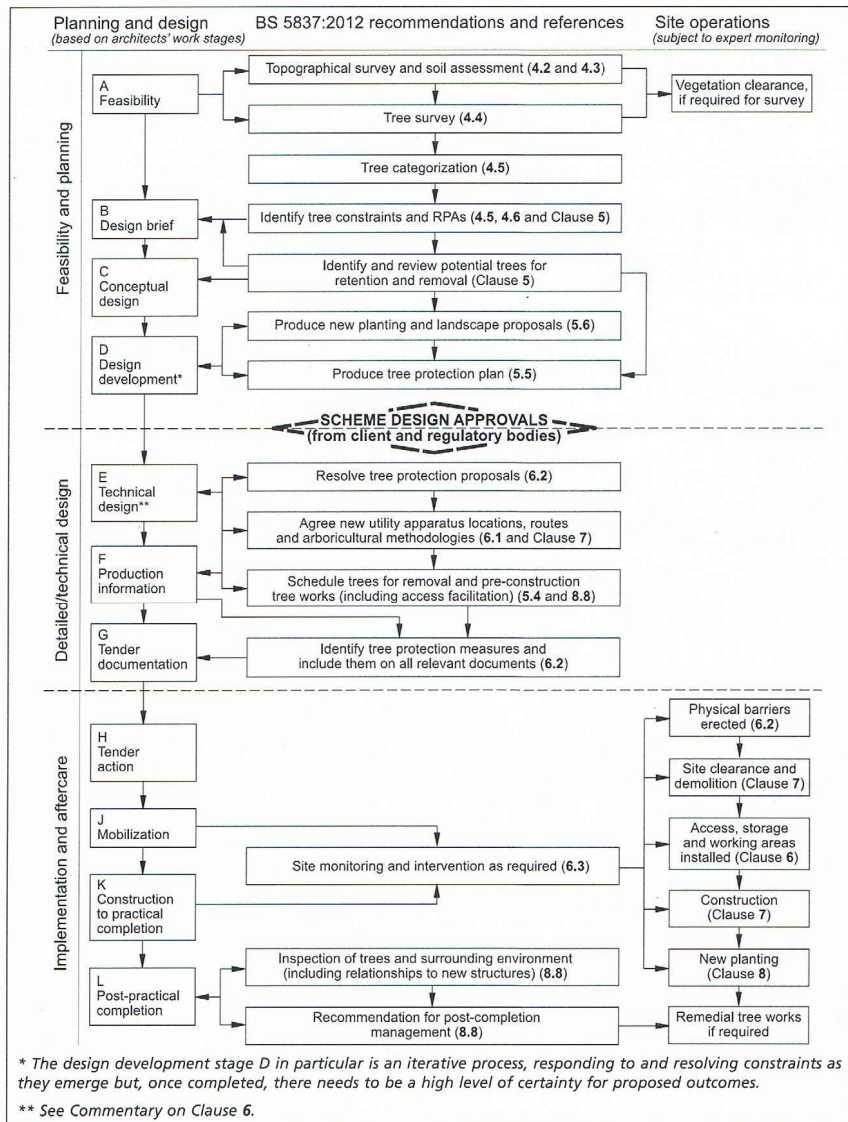


APPENDIX B - FIGURE 1 THE DESIGN AND CONSTRUCTION PROCESS AND TREE CARE

BS 5837:2012

BRITISH STANDARD

Figure 1 The design and construction process and tree care



APPENDIX C - TABLE 3. TRENCHLESS SOLUTIONS FOR INSTALLING UTILITY APPARATUS

Table 3 Trenchless solutions for differing utility apparatus installation requirements

Method	Accuracy mm	Bore dia. ^{A)} mm	Max. sub. ^{B)} length m	Applications	Not suitable for
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway undercrossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1 200	150	Pressure pipes, cables including fibre optic	Gravity-fall pipes, e.g. drains and sewers ^{C)}
Pipe ramming	≈150	150 to 2 000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling ^{D)}	≈50 ^{E)}	30 to 180 ^{F)}	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5 m

^{A)} Dependent on strata encountered.

^{B)} Maximum subterranean length.

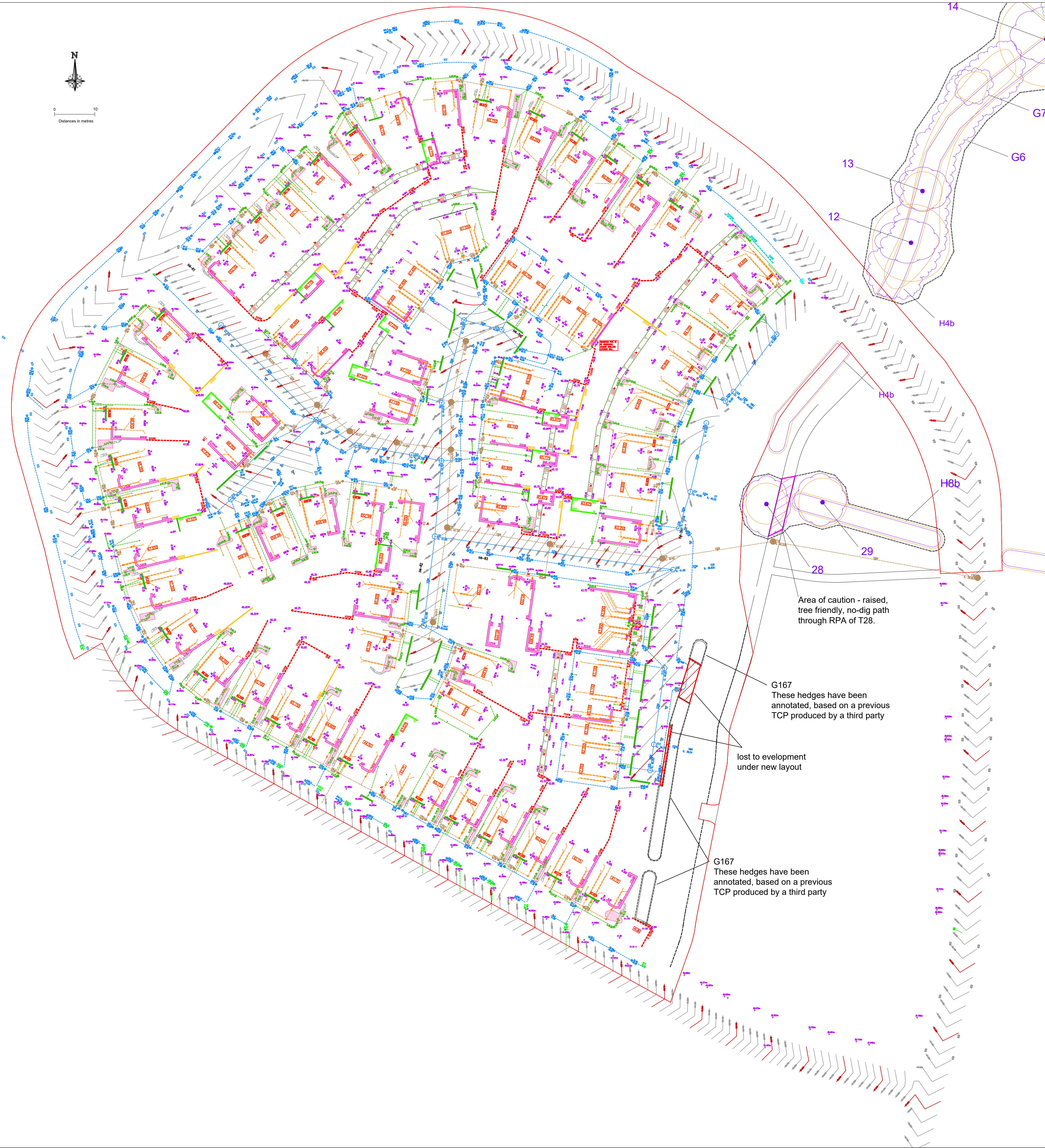
^{C)} Pit-launched directional drilling can be used for gravity fall pipes up to 20 m subterranean length.

^{D)} Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.

^{E)} Substantial inverse relationship between accuracy and distance.

^{F)} Figures given relate to single pass: up to 300 mm bore achievable with multiple passes.

APPENDIX D - TREE PROTECTION PLAN



Tree Number	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Remaining Contribution (years)	Retention Category	Root Protection Area (m²)	Root Protection Radius (m)
H4a	NA	Blackthorn, hawthorn, ash, goat willow	5	200	40+	B 2,3	18	2.4
H4b	NA	Blackthorn, hawthorn, ash, goat willow, wild privet, dog rose, field maple	6	200	40+	B 2,3	18	2.4
G6	NA	Ash, hawthorn, field maple, crab apple	11	275	40+	B 2,3	34	3.3
12	569	Pedunculate oak	18	775	40+	B 2,3	272	9.3
28	NA	Ash	15	425	20-40	B 2,3	82	5.1
29	581	Ash	17	500	40+	B 2,3	113	6
G167 (Hedges)	NA	Hawthorn, Ash, Field rose, Wild privet, Elder and Blackthorn	/	/	40+	/	/	/

Key

Trees to be considered for retention.

A – High

B - Moderate

C - Low

Root Protection Area

Trees unsuitable for retention.

U - Fell

Barrier Fencing

Trees Lost to Development

Area of Caution

Tree Key

Crown Spread

Measured in North, South, East and West side of tree.

T1

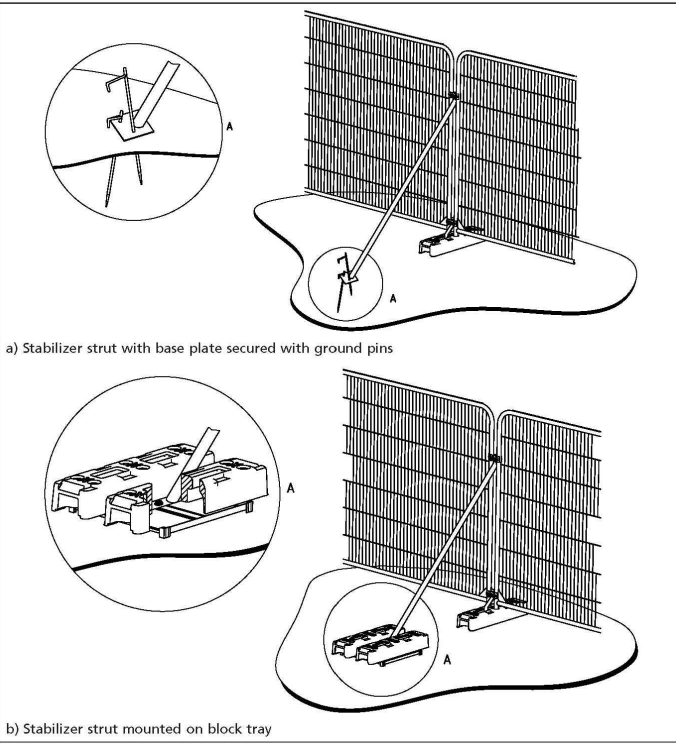
Trees Number

(T - Individual Tree, G - Group, A - Tree area, W - Woodland, H - Hedgerow)

Root Protection Area (RPA)

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 is treated as a priority.

Figure 5: Examples of above-ground stabilising systems



This plan should be read in conjunction with the 22-036a Great Milton Park, Hollies 4, AMS

July 2025 (Ambler SJ.)

The root protection area and crown spread as shown, are a constraint to development and both should form part of the construction exclusion zone (Construction Exclusion Zone)

The original of this drawing was produced in colour. A monochrome copy should not be relied upon.

STEVE AMBLER & SONS
TREE SPECIALISTS LTD

Steve Ambler & Sons Tree Specialists Ltd

Tec.Arbor.A., Dip.Arb.(RFS)., F.ARBOR.A.

Mob: 07961 322908

Email: vaughan@steveambler-trees.com

Client	Redrow Home Ltd
Surveyed by	VL
Date surveyed	July 2025
Drawn by	LP
Scale	1:500 when printed at A1
OS Grid Ref	336450 (E), 188796 (N)
INDICATIVE ONLY. PLEASE REFER TO ROOT PROTECTION TABLE. DO NOT SCALE FROM THIS DRAWING CHECK ALL DIMENSIONS ON SITE	
REF. DRAWINGS 10275 - 300 - 01	Engineering Plan

TITLE

Tree Protection Plan
Great Milton Park - Hollies 4

DRAWING No:

22-036a