

Ms B Cade-Bend
Elms Farm
Elms Cross
Westwood
Bradford on Avon
BA15 2AL

07 July 2025

Our Ref: WT 038-25 AIA ltr

Dear Ms Cade-Bend

Re: Tree information relating to planning application at Elms Farm, Elms Cross, Westwood, Bradford-On-Avon, BA15 2AL

Further to our recent site survey, please find details relating to the tree protection and management issues regarding your planning application for a new dwelling following demolition of an existing agricultural building. In this context, I have considered the likely impact on the adjacent trees and provided the following appropriate mitigation requirements to minimise harm to them. It would be appropriate to forward these details to the Local Planning Authority (LPA) by way of this letter with its attached plan and illustrative notes.

I enclose plan WTP1, which is an adapted version of the proposed layout provided by Richmond Bell Architects, (drawing number 841 - Elms Farm Site Proposed 16.06.25). It has been annotated to identify all the relevant trees and show the areas where appropriate tree protection applies. This plan is illustrative, and the precise location of protective measures may need to be modified in the context of the site conditions at the time of implementation.

Collection of tree information: I inspected each tree and have indicated the numbering on the tree protection plan (WTP1) in Appendix 1. For each individual tree and group, I collected information on species, height, diameter, maturity and potential for contribution to amenity in a development context. As advocated in BS 5837, each tree was then allocated to one of four categories which reflected its suitability as a material constraint on development:

- **Category A:** Trees of high quality and value
- **Category B:** Trees of moderate quality and value
- **Category C:** Trees of low quality and value
- **Category U:** Trees unsuitable for retention, usually to be removed

This information is recorded in the tree schedule included as Appendix 2, with further explanatory notes. I stress that my inspection was of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level.



The root protection areas: BS5837:2012 paragraph 4.6.1 gives recommendations for the areas of root protection to be the equivalent to the area of a circle centred on the single stem tree with a radius of at least 12 times the trunk diameter. For trees with more than one stem, the recommended formulas were used to arrive at the combined stem diameter calculation. The calculated root protection area (RPA) for each tree was capped to 707m². This distance is given for guidance to each tree or group in the schedule. In practice, the siting of the specific protection measures may be different. The implication of this notional RPA is that no significant disturbance should occur within it if the trees are to be successfully retained. As advocated in paragraph 4.6.3 of that document, where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon or equivalent area has been produced. Any modifications to the shape of the RPA have reflected our interpretation of a reasonable and likely root distribution.

Tree assessment and management advice: The comments made about the health and stability of the trees within this report were correct at the time of inspection. It should be recognised that trees are dynamic structures that can never be completely predictable and may become unstable or partially unstable even in average weather conditions. Changes can occur not only to environmental triggers but also in response to biological or mechanical events. For these reasons, the tree assessment advice only remains 18 months from the date that the trees were last inspected. No tree is ever safe due to the unpredictable laws and forces of nature.

The inspection was carried out from ground level. Where there was restricted access to the base of a tree, its attributes were assessed from the nearest point of access. Binoculars were used to observe features higher in the canopies such as foliage, extension growth and/or bud proliferation. No soil or tissue samples were taken during this inspection and no invasive diagnostic equipment was used to detect decay. If ivy covered, I probed and tapped the wood from ground level to establish if there were any obscured features that were relevant to the assessment. This did not extend to removing all the ivy or probing beyond what could be reached from ground level. Where trees have thick ivy, it would be impractical in every case to remove it or climb into the crown to have a closer look. However, where I suspect there are obvious visible significant outward health problems or structural defects visible under the ivy, I may recommend its removal for a further assessment.

Protected trees: After investigating the LPA online mapping system, it was established that there are no tree preservation orders (TPOs) protecting the trees on or surrounding the site and it is not within a conservation area.

Soil assessment: British Standard (BS) 5837:2012 Trees in relation to design, demolition and construction – Recommendations advocates that a soil assessment should be carried out to inform decisions relating to Root Protection Areas (RPAs), tree protection, new planting and foundation design. I have consulted the British Geological Survey (BGS) website and their Geology Viewer, and this advises that the bedrock geology for the site is **Cornbrash Formation - Limestone**. I did not undertake any excavations on site to confirm this and a full geotechnical site investigation may need to be undertaken to provide a more in-depth level of information regarding soil type for the site.



The proposal and its impact on trees: From my site observations and the information provided, I have considered the following relevant tree issues relating to the planning proposal, and where appropriate, provided necessary mitigation options to minimise harm to their health and amenity value. To facilitate the proposal, one small ash tree (T017) will need to be removed. However, it is in poor condition (BS5837 category U) and would be unsuitable for retention, irrespective of this development proposal (Image 1). In this case, the scheme offers sufficient space for new landscaping that includes trees and shrubs that will easily mitigate this loss. If required, it would be appropriate for the precise detail to be agreed with the LPA through a planning condition.



Image 1: T017 is in severe decline and should be removed irrespective of this development proposal

A small part of the proposed driveway/turning area is shown over the notional RPAs of T006. However, as supported by BS5837:2012 paragraph 7.4.2.3 this minor encroachment is less than 20% of its RPA and mostly over existing compacted ground (Image 2), so these works are unlikely to cause significant harm to the tree. It will be necessary to protect the remaining surrounding rooting area with a temporary barrier and apply some hand digging precautions to deal with any exposed area required for the new surface. In this situation, I consider that a new permeable and load spreading cellular confinement system is excessive and not required in this instance to minimise harm to this tree.

In principle, the surrounding retained trees can be easily retained and protected for the duration of the proposed works. However, they should be protected during the development process with precautionary barriers as shown on plan WTP1. The precise location of this protection needs to be agreed on site with the LPA before any development activity starts and they must be retained in place until completion.



Image 2: There will be some minor encroachment of the new driveway within the RPA of T006 but this is mostly over existing compacted ground

Tree pruning to facilitate access/working space: At this stage no pruning requirements are anticipated to accommodate these proposals. If this changes for any reason, I advise that these matters are considered at an early stage and agreed with the LPA prior to the work commencing. If it is decided that some pruning is required to facilitate the proposal, this should be done in accordance with BS3998: 2010 *'Tree Work Recommendations'*, without harming the health or appearance of nearby trees.

Site access and storage of materials: Materials can be delivered to site using the existing vehicular access and stored on the existing surfacing outside the fenced areas (see plan WTP1). It is entirely feasible to move materials to the working areas by hand or using small low ground-effect plant, with no significant harm to trees.

Demolition and removal of the existing barn: Although significant tree roots are unlikely to be encroaching under the existing concrete foundation base of the barn (Image 3), there is potential for accidental harm beyond the footprint if this structure is not carefully removed during the demolition phase. Machinery operating on the existing concrete base could, under arboricultural supervision, be used to carefully remove the upper parts of the barn, however where possible hand tools should be the preferred method to minimise accidental damage. The edges of the existing concrete surface should be retained where possible to avoid unnecessary root disturbance and if roots are discovered, hand digging precautions will need to be applied to minimise harm.



Image 3: The existing concrete surface and barn structure will need to be carefully demolished to minimise accidental harm to the adjacent trees.

Drainage and other services: Drainage runs, soakaways and the installation of other services can cause disruption to RPAs and result in important trees being damaged. We advise that these matters are considered at an early stage and agreed with the LPA prior to the development phase commencing.

Post occupancy pressures on trees: The location and character of the proposal has been achieved in consideration of all the site factors, including the presence of trees. In reference to BS5837:2012 recommendations paragraph 5.3.4 and its sub paragraphs, any issues relating to shading, privacy and screening, direct damage, future pressure for removal and seasonal nuisance have been factored into the design to minimise any post occupancy pressure on trees. In this case, the dwelling is detached with ample garden space for new occupants. After discussions with the architect, it was confirmed the property has been designed so that the main living areas will allow the new occupants normal and reasonable access to daylight. Overall, trees and vegetation around the boundaries will provide useful canopy cover between the adjacent properties and it will be in the interests of new occupants to retain them for the seclusion and shelter they provide. In the context of all these points, I believe that the new occupants should be able to have normal use of their property without unreasonable hindrance from the adjacent trees.

Tree protection details: The recommendation in BS5837:2012 is that where details might need to be submitted to allow for changes that might occur after planning permission has been granted, heads of terms for an arboricultural method statement (AMS) would be appropriate. That is appropriate for sites with a range of arboricultural protection measures and methods to be determined. For this site, the development is reasonably straightforward, so a separate AMS is not proposed. However, in the context of the above discussions, I have identified the following protection issues that may be necessary:



- **Protective barriers and root protection area (RPA):** The protective barriers erected need to be in accordance with Figures 2 and 3 of BS 5837:2012, Appendix 3 and the tree protection plan (WTP1). They should form the boundary of the construction exclusion zone (CEZ). Where feasible, the position of the barrier will be based on a distance equivalent to the radius of the RPA of the tree. Once erected all-weather signage should be displayed stating 'Construction Exclusion Zone - Keep Out'. Once established, the protective barriers are not to be moved without written consent from the LPA.
- **Storage areas outside the RPA:** Before construction begins on site, it is important to identify areas outside the RPAs that minimise chemical pollution and damage from construction materials. On this site, there is adequate space on the existing drive for this purpose.
- **Demolition of the existing barn:** Machinery operating on the existing concrete base could, under arboricultural supervision, be used to carefully remove the upper parts of the barn, however where possible hand tools should be the preferred method to minimise accidental damage. The edges of the existing concrete surface should be retained to avoid unnecessary root disturbance and if roots are discovered, hand digging precautions must be carried out by hand according to the guidelines in Appendix 3 to minimise harm.
- **Installation of new services or upgrading of existing services:** It is often difficult to clearly establish the detail of services until the construction is in progress. Where possible, it is proposed to use any existing services into the site and keep all new services outside RPAs. However, where existing services within RPAs require upgrading or new services have to be installed in RPAs, great care must be taken to minimise any disturbance. Any excavation must be carried out by hand according to the guidelines in Appendix 3. If services do need to be installed within RPAs, written approval must be obtained from the LPA before any works are carried out.
- **Reinstatement/landscaping works:** No heavy machinery should be driven over unprotected ground and materials must be stored outside RPAs. The tree protective fencing can only be removed with the agreement of the project arboriculturist and may have to be reinstalled during a break in operations. Any soil removal or replacement, excavations for hard landscaping or installation of any structures including lighting, water, electric gates etc must be approved by the project arboriculturist. Unwanted vegetation can be removed using handheld tools to avoid damage to the stems of retained trees. Planting holes for new trees or shrubs shall be dug by hand and will be repositioned if woody roots are encountered. For further advice, refer to the tree protection guidance notes in Appendix 3.

It will be the builder's responsibility to ensure that the details of this letter are known and understood by all site personnel. A copy must be kept on site at all times, and the site manager must brief all personnel who could have an impact on trees on the specific tree protection requirements. This should be a part of the site induction procedures and written into appropriate site management documents. If appropriate, the builder should instruct an arboricultural consultant to comply with any necessary planning conditions relating to pre-commencement meetings and/or agree protection with ongoing supervision requirements sanctioned by the LPA.



New trees/landscaping: New trees should be as large as possible for the planting space available. The supply, planting and maintenance of all new trees will need to be in accordance with BS 8545, with an expectation that any planning conditions will secure the provision of appropriate maintenance and replacement in the event of any trees not surviving to independence in the landscape.

Tree establishment and care: For further advice on young tree establishment, a useful introductory guide has been produced by the Arboricultural Association which can be found at <https://www.trees.org.uk/Help-Advice/Guide-to-Young-Tree-Establishment>. This sets out the principles of good tree choice, planting practice and aftercare.

In summary, this proposal will result in the loss of one small tree that is unsuitable for retention because of its poor condition. However, it is entirely feasible to plant a new tree elsewhere around the site to compensate for the loss. This submission has demonstrated that it is reasonably practicable to develop the scheme without significant harm to retained trees and it takes proper account of potential pressures for pruning and felling post-occupancy. If adequate precautions to protect the retained trees are implemented as recommended in this report, and as may reasonably be required by consent conditions, the overall impact of the proposal on local amenity will be low and limited to the short term only. Any additional information required for reassurance, can be provided by way of conditions attached to the planning permission. The scheme accords with the principles set out in the National Planning Policy Framework and is technically compliant with BS5837:2012 and the way in which that Standard has been applied. Any deviations from its recommendations have been properly justified with appropriate actions. Therefore, I do not believe there are supportable or reasonable grounds for refusing permission in terms of the trees.

I believe that this covers all the appropriate issues but please call me if there is anything else that you think should be included.

Yours sincerely

Mark Wadey NDArb CUEW MArborA RCarborA MICFor
Arboricultural Consultant

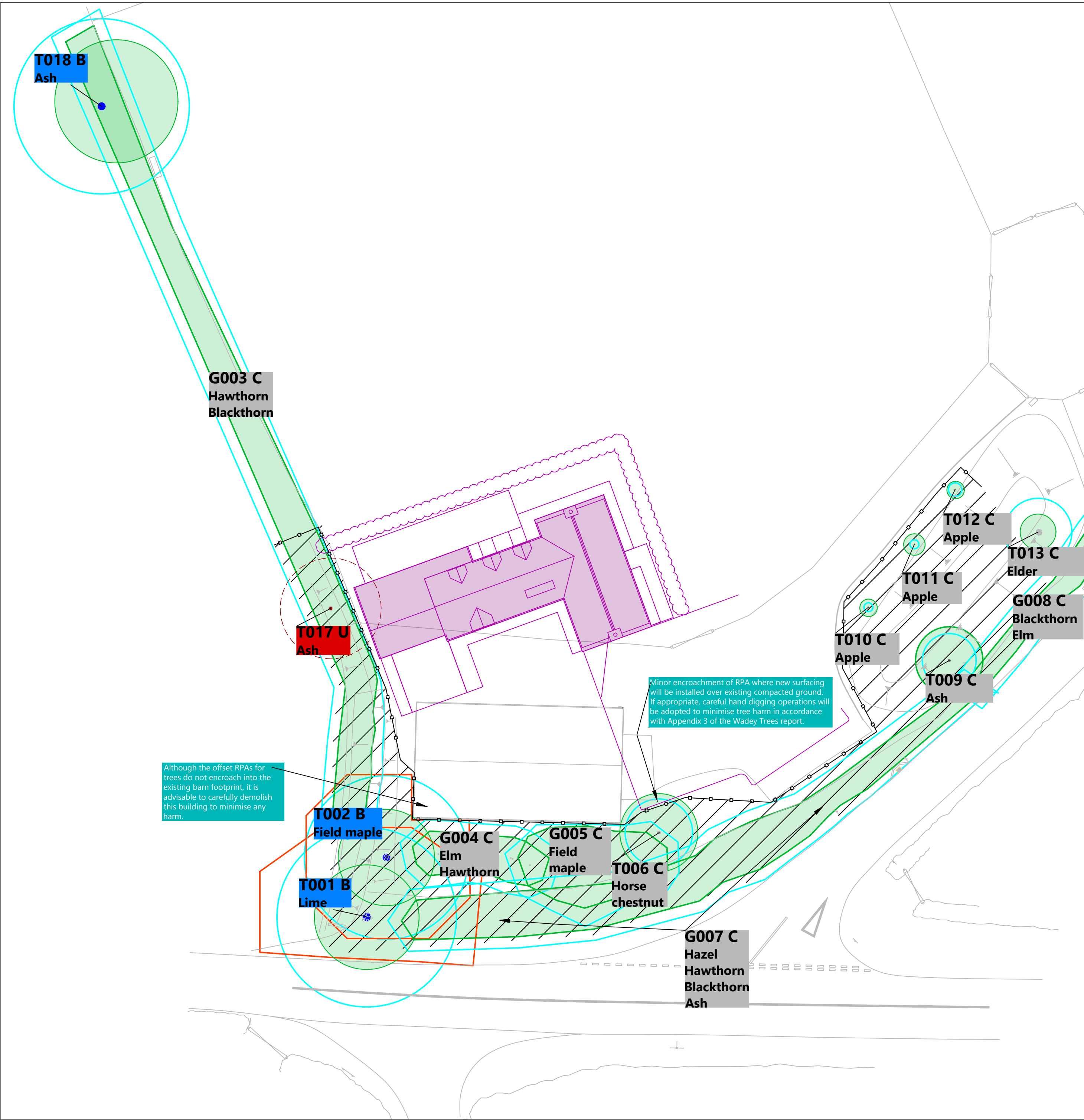


Appendices:

1. Tree Protection Plan WTP1
2. Data Collection
3. Arboricultural Method Statement

Appendix 1 - The Tree protection Plan WTP1: Illustrating tree protection and management proposals

Content: 1 A2 plan @ scale 1:250



IMPORTANT NOTE:
A pre-commencement meeting must be held on site before works begin. The methods of tree protection outlined in the approved Arboricultural report and illustrated on this plan should be fully discussed with the designated Site Manager and Arboricultural Consultant involved with the project at the time of implementation. Any clarifications or modifications should be recorded and circulated to all parties in writing.

0 Metres 5 10 15 20
Scale: 1:250 @ A2



Key:

- T001 Trees - colour coded by BS 5837 category
- A BS category - Trees of high quality
- B BS category - Trees of moderate quality
- C BS category - Trees of low quality
- U BS category - Trees unsuitable for retention
- Notional BS 5837 RPA boundaries
- Offset BS 5837 RPAs to provide protection for rooting in other directions
- Tree to be removed
- Tree canopies
- Existing layout
- Proposed layout
- Construction exclusion zone (CEZ) to be protected by BS 5837 compliant fencing

Tree Protection Guidance
Examples of Standard Barriers

Protective barriers are not to be moved without written consent from the Local Planning Authority (LPA) and any adjustments should be under direct supervision of the project Arboriculturist to maintain the Root Protection Area (RPA) of each tree. No materials, chemicals, machinery or vehicles must be stored within the protected area as defined on the Tree Protection Plan.

KEY

- Standard scaffold poles
- Heavy gauge 2m tall galvanised tube and welded mesh infill panels
- Panels secured to uprights and cross-members with wire ties
- Ground level
- Uprights driven into the ground until secure (minimum depth 0.6m)
- Standard scaffold clamps

Extract from BS5837: 2012 Figure 2—Default specifications for tree protective fencing.

Image 1: Scaffold and Heras panels can provide standard protection that is fit for purpose.

For further information, refer to the WT tree schedule. Do not scale from this drawing (unless for planning purposes), please check all dimensions on site, and notify us of any discrepancies. Wadley Trees Ltd cannot be held responsible for inaccuracies in the topographical plan on which this drawing is based. © Wadley Trees Ltd 2020.

This drawing is designed to reflect only the principles of layout and/or design insofar as these relate to the protection of trees to be retained, and should NOT be read as a definitive engineering or construction method statement. Reference should be made to the architect or structural engineer, as appropriate, over any matters of construction detail or specification, or any engineering standards or regulatory requirements relating to proposed structures, hard surfaces or underground services.

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DRAWN: EJS CHECKED: M/W DATE: 7 July 25 REVISION:

LOCATION OF TREES, CATEGORISATION & DEVELOPMENT AT:
Elms Farm, Elms Cross, Westwood, Bradford on Avon, BA15 2AL

DRAWING NO: **WTP1** DRAWING TITLE: Tree Protection Plan

SCALE: 1:250 SHEET SIZE: A2 SHEET NUMBER:

WT PROJECT NO: WT 038-25 STATUS: PUBLISHED

CURRENT DRAWING DATE: 25/03/12 EXP RBA and B41 - Elms Farm Site Proposed 16.06.25

Appendix 2 Data Collection: In accordance with BS 5837 (2012), all tree schedule data has been collected based on the recommendations set out in subsection 4.4 of BS 5837). **NOTE:** Colour annotation is A trees green background; B trees blue background; C trees grey background; U trees red background

Tree No.	Species	Height (m)	Stem diameter(s) (mm)	Spread	Physiological Cond	Structural Cond	Life Stage	Survey Notes	Rem. Contrib.	Retention Category	RPA	Tree work recommendations
T001	Lime (<i>Tilia sp.</i>)	14	3 stems: 600,150,250		Good	Fair	Early Mature	Competes with adjacent field maple tree. Crossing branches with signs of stem fusion.	30+ Years	B1	Radius: 8.0m. Area: 205 sq m.	
T002	Field maple (<i>Acer campestre</i>)	14	2 stems: 500,350		Good	Good	Early Mature	Restrictions to access: Dense ivy present over trunk	30+ Years	B1	Radius: 7.3m. Area: 172 sq m.	
G003	Hawthorn (<i>Crataegus sp.</i>) Blackthorn (<i>Prunus spinosa</i>)	6	100		Good	Fair	Semi Mature	Provides useful boundary cover.	20+ Years	C1	Area: 62 sq m.	
G004	Elm (<i>Ulmus sp.</i>) Hawthorn (<i>Crataegus sp.</i>)	6	100		Good	Fair	Young	Poorly developed trees, with low future potential.	20+ Years	C1	Area: 73 sq m.	
G005	Field maple (<i>Acer campestre</i>)	12	350		Good	Fair	Semi Mature	Restrictions to access: Dense ivy present over trunk. Crown containment pruning evident on barn side.	30+ Years	C1	Area: 104 sq m.	
T006	Horse chestnut (<i>Aesculus hippocastanum</i>)	8	250		Good	Good	Young	Small tree not easily seen from public viewpoints.	20+ Years	C1	Radius: 3.0m. Area: 28 sq m.	
G007	Hazel (<i>Corylus avellana</i>) Hawthorn (<i>Crataegus sp.</i>) Blackthorn (<i>Prunus spinosa</i>) Ash (<i>Fraxinus sp.</i>)	8	200		Good	Fair	Semi Mature	Provides useful boundary cover.	20+ Years	C1	Area: 291 sq m.	

Appendix 2 Data Collection: In accordance with BS 5837 (2012), all tree schedule data has been collected based on the recommendations set out in subsection 4.4 of BS 5837). **NOTE:** Colour annotation is A trees green background; B trees blue background; C trees grey background; U trees red background

Tree No.	Species	Height (m)	Stem diameter(s) (mm)	Spread	Physiological Cond	Structural Cond	Life Stage	Survey Notes	Rem. Contrib.	Retention Category	RPA	Tree work recommendations
G008	Blackthorn (<i>Prunus spinosa</i>) Elm (<i>Ulmus sp.</i>)	5	100		Fair	Fair	Young	Poor quality trees struggling to become established. Some small dead Elm trees within group	10+ Years	C1	Area: 99 sq m.	
T009	Ash (<i>Fraxinus sp.</i>)	6	200	N:3 E:3 S:3 W:3	Fair	Fair	Young	Some early ash dieback symptoms visible. Ash Health Class 1 – 100%–75% remaining canopy.	10+ Years	C1	Radius: 2.4m. Area: 18 sq m.	
T010	Apple (<i>Malus sp.</i>)	2	30		Good	Good	Newly planted	Small tree not easily seen from public viewpoints.	20+ Years	C1	Radius: 0.4m. Area: 1 sq m.	
T011	Apple (<i>Malus sp.</i>)	3	30		Good	Good	Newly planted	Small tree not easily seen from public viewpoints.	20+ Years	C1	Radius: 0.4m. Area: 1 sq m.	
T012	Apple (<i>Malus sp.</i>)	4	50		Good	Good	Newly planted	Small tree not easily seen from public viewpoints.	20+ Years	C1	Radius: 0.6m. Area: 1 sq m.	
T013	Elder (<i>Sambucus nigra</i>)	5	250		Good	Fair	Semi Mature	Small shrub not easily seen from public viewpoints.	10+ Years	C1	Radius: 3.0m. Area: 28 sq m.	
T014	Ash (<i>Fraxinus sp.</i>)	8	250	N:3 E:3 S:3 W:3	Fair	Fair	Young	Some early ash dieback symptoms visible. Ash Health Class 1 – 100%–75% remaining canopy.	10+ Years	C1	Radius: 3.0m. Area: 28 sq m.	
T015	Horse chestnut (<i>Aesculus hippocastanum</i>)	8	250	N:3 E:3 S:3 W:3	Good	Good	Young	Small tree with future potential.	20+ Years	C1	Radius: 3.0m. Area: 28 sq m.	
G016	Blackthorn (<i>Prunus spinosa</i>) Hawthorn (<i>Crataegus sp.</i>)	5	100		Good	Fair	Young	Provides useful boundary cover.	20+ Years	C1	Area: 117 sq m.	

Appendix 2 Data Collection: In accordance with BS 5837 (2012), all tree schedule data has been collected based on the recommendations set out in subsection 4.4 of BS 5837). **NOTE:** Colour annotation is A trees green background; B trees blue background; C trees grey background; U trees red background

Tree No.	Species	Height (m)	Stem diameter(s) (mm)	Spread	Physiological Cond	Structural Cond	Life Stage	Survey Notes	Rem. Contrib.	Retention Category	RPA	Tree work recommendations
T017	Ash (<i>Fraxinus sp.</i>)	7	250		Poor	Poor	Semi Mature	Ash dieback symptoms visible throughout the crown. Ash Health Class 3 – 50%–25% remaining canopy.	<10 years	U	Radius: 3.0m. Area: 28 sq m.	Fell for management
T018	Ash (<i>Fraxinus sp.</i>)	15	650		Fair	Fair	Mature	Early dieback symptoms visible throughout the crown. Ash Health Class 1 – 100%–75% remaining canopy.	20+ Years	B1	Radius: 7.8m. Area: 191 sq m.	

Appendix 2 Data Collection Cont'd: Explanatory notes

Structure: The following categories are assigned appropriately to each landscape feature: T=(tree); G=(group); H=(hedge); C=(coppiced); M=(multi-stemmed); P=(pollard); Sh=(shrubs); S=(stump) or W=(woodland).

Species: Species identification is based on visual observations. Where there is some doubt over tree identity, sp is noted after the genus name in the botanical names section to indicate that the species cannot be reliably identified at the time of the survey. Where there is more than one species in a group, only the most frequent are noted and not all the species present, may be listed. The tree botanical names surveyed on this site are listed in column 3.

Height: Height is estimated to provide an indication of the size of the tree.

Stem diameter: Stem diameter is estimated or measured and recorded in 2.5cm increments as advised in BS 5837 Table D1. It is measured with a diameter tape unless access is restricted, direct measurement is not possible because of ivy on the trunk or the tree is assessed as poor quality. The point of measurement and the adjustments for stem variations are as advised in Figure C1 of BS 5837. The RPAs given below have been used for single stem trees and the equivalent resultant combined stem diameter for multi-stemmed trees.

Branch height and crown spreads: Where crown accuracy varies from site observations and the original topographical survey, new measurements of the crown may be taken and illustrated on the plan as a crown amendment. These are taken in the context of the development proposal where it is considered there may be encroachment from the development. For example, it may only be necessary to record the measurement of one side of the canopy where it overhangs the site, or where there is likely to be some kind of impact to branches/crown of the tree from development proposals. If there are any significant trees missing from the original topographical survey, their positions are estimated and branch spread is taken as a minimum at the four cardinal points, to derive a representation of the crown. Also, where it is considered appropriate, existing height above ground level of: 1) first significant branch and direction of growth (e.g. 2.4-N); 2) canopy will be recorded to inform on ground clearance where access issues may be a concern.

Tree condition: The tree condition is represented by the surveyor's initial visual observations of its health and/or structural integrity. These are separated into the following subcategories:

Physiological condition (P)	Description
Good	Appears to be healthy and have good vitality.
Fair	Generally, in good health but with visible signs of decline or reduced vitality.
Poor	Obviously in poor health and significant decline.
Dead	Dead, or very little live growth.
Structural condition (S)	Description
Good	No significant structural defects/weaknesses.
Fair	Some visible defects but no significant hazards/weaknesses.
Poor	Significant defects/weaknesses or dangerous/potentially dangerous condition.

Appendix 2 Data Collection Cont'd: Explanatory notes

Life stage: For the purposes of this report the following life stages are recorded as one of seven categories below. Age class is indicative and will vary between species:

LIFE STAGE	DEFINITION
Newly planted	Very young, newly planted trees at least within the last 5 years.
Young	Small establishing tree in its youngest years that could be transplanted with specialist equipment, i.e. less than 150mm in diameter at 1.5m.
Semi-mature	An established tree, but with some growth to make before reaching its potential maximum size. A tree within its first third of lifespan.
Early mature	A tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread. A tree in the second third of life span.
Mature	A mature specimen with limited potential for any significant increase in size, even if healthy. A tree within its final third of expected lifespan.
Over mature	A senescent (declining/degradation) or moribund specimen of low vigour within its final third of expected lifespan. Possibly also containing sufficient structural defects with safety and/or duty of care implications.
Veteran	Specimens exhibiting features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.
Ancient	A tree which is remarkably old for its species.

General observations: Only relevant features such as tree physiology, structural condition, decay and crown or branch structure that may impact on the proposed development are recorded. If there are no notes, then the presumption should be that no relevant features were observed.

Remaining contribution: This is broadly interpreted as <10 years, 10+ years, 20+ years, or 40+ years to provide some indication of a tree's potential for future contribution to its locality.

BS category: Each tree is placed into a relevant coloured category based on their quality and contribution they offer in terms of their arboricultural, landscape or cultural values. This assessment is based on the BS5837 Table 1 cascade chart for tree quality assessment summarised at the beginning of this report.

RPA measurements: For single stem trees, the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, one of the two calculation methods set out in paragraph 4.6 of BS5837 recommendations will be used. In all cases, the stem diameter(s) will be measured in accordance with Annex C and Annex D of that document. The calculated RPA for each tree will be capped to 707 m².

Future tree safety inspections: Our assessment of the trees was carried out on the basis that a re-inspection would be carried out within a year of the assessment visit and our advice on tree condition must be reviewed annually from the date of that visit.

General Principles

Objective: This guidance sets out the general principles that must be followed when working in Root Protection Areas (RPAs). Before work starts on site, the purpose of this guidance is to demonstrate to the LPA that tree protection issues have been properly considered and to provide a written record of how they will be implemented. Once the site works start, this guidance is specifically for the site personnel to help them understand what has been agreed and explain what is required to fully meet their obligations to protect trees. All personnel working in RPAs must be properly briefed about their responsibilities towards important trees based on this guidance.

RPA description: RPAs are the areas surrounding important trees where disturbance must be minimised if they are to be successfully retained. All RPAs close to the construction area are illustrated on the tree protection plans accompanying this advice. Damage to roots or degradation of the soil through compaction and/or excavation within RPAs is likely to cause serious damage. Any work operations within RPAs must be carried out with great care if trees are to be successfully retained.

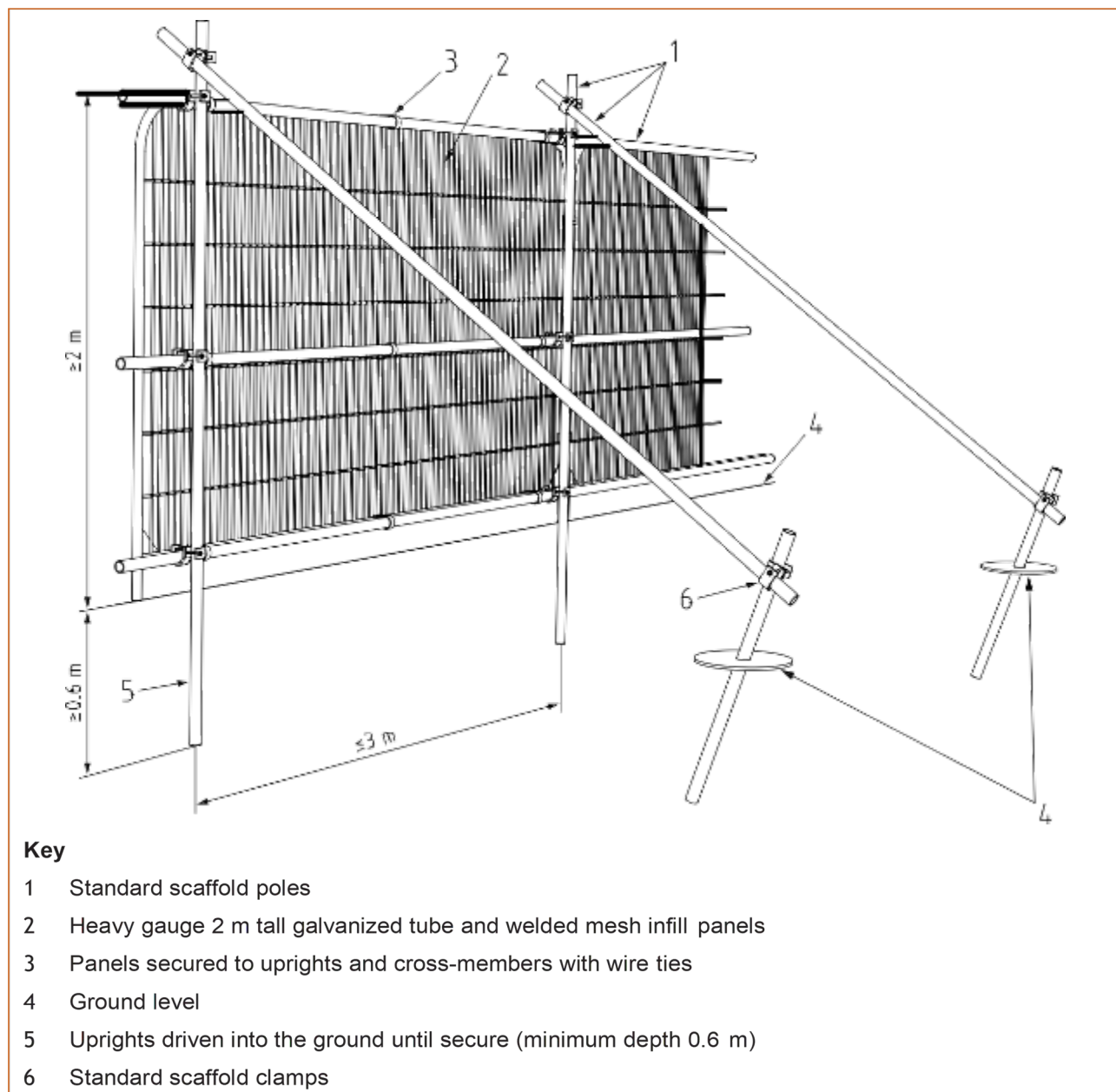
Use of this guidance: Anyone working within an RPA must follow this guidance if important trees are to remain unharmed. They must take care to minimise excavation into existing soil levels and limit any fill or covering that may affect soil permeability. This advice should always be read in conjunction with the tree protection plan illustrating the areas where specific precautions are necessary. Each area where precautions are required is annotated on the plans as identified on their keys. All plans are illustrative and intended to be interpreted in the context of the site conditions when the work is started. All protective measures should be installed according to the prevailing site conditions and agreed as satisfactory by the appropriate supervising officer before any demolition or construction work starts.

Preventing adverse impact to the RPA: Any part of the RPA beyond the agreed work area must be isolated from the work operations by protective barriers or ground protection to at least the minimum standard described in BS 5837 for the duration of the work. Any further precautions required to minimise harm to trees should be undertaken using the relevant tree protection guidance in the following pages.

Arboricultural supervision: Qualified arboricultural supervision is essential to minimise the risk of harm to trees. Ongoing work must be inspected regularly and, on completion, must be signed off by the arboriculturist to confirm compliance by the contractor and to sign off relevant Planning Conditions. In the context of this guidance, an appropriate supervising officer would normally be an arboriculturist.

Tree protective barriers

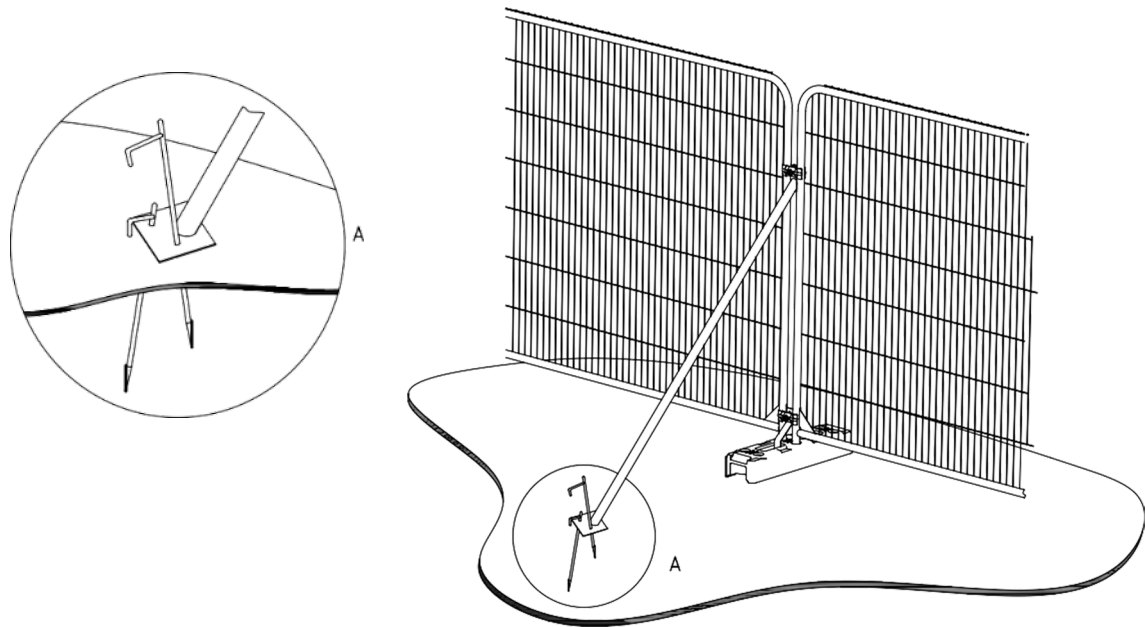
Installing Barriers: Tree Protective barriers must be fit for purpose, and once installed must not be moved without written consent from the Local Planning Authority (LPA). If it is absolutely necessary for any adjustments, they should be under direct supervision of the project Arboriculturist to maintain the Root Protection Area (RPA) of each tree. No materials, chemicals, machinery or vehicles must be stored within the protected area as defined on the Tree Protection Plan. On this site, all exposed rooting areas should be protected by barriers (while vulnerable to damage), in accordance with BS 5837 figures 2 and 3 below until there is no risk of damage from the development activity. This work should be subject to arboricultural supervision.



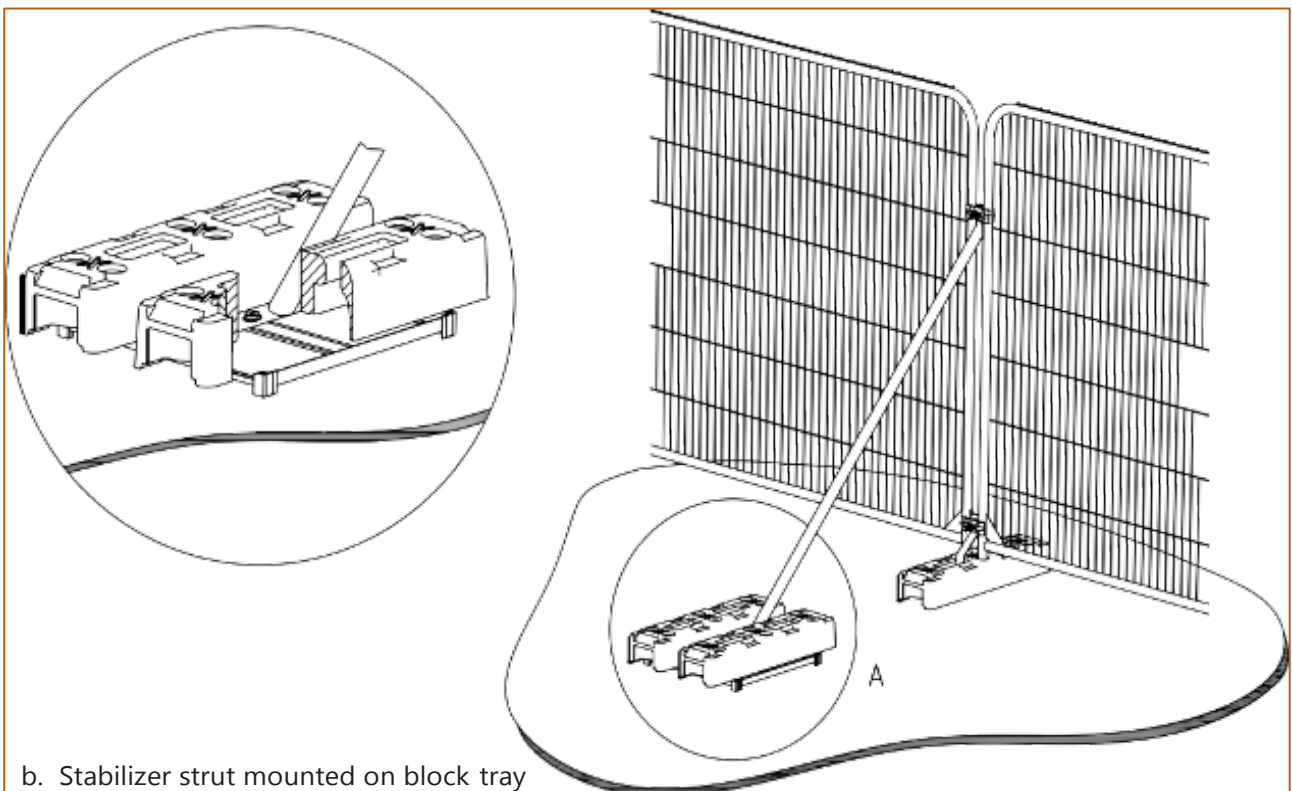
Extract from BS5837: 2012 Figure 3: Examples of above-ground stabilizing systems

Appendix 3 – Tree Protection Guidance

Examples of tailored protective barriers: A range of methods can be used to protect the trunks and underlying soil but whatever the choice of method, the end result must be fit for purpose to prevent the protected area from being breached by the construction activities.



a. Stabilizer strut with base plate secured with ground pins



b. Stabilizer strut mounted on block tray

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Picture 1: All barriers should be labelled to keep working activities outside the Construction Exclusion Zones (CEZs).



Picture 2: Scaffolding supports and board coverings erected around the trunks of trees can provide suitable protection against traffic turning into the site.



Picture 3: Temporary barriers are useful around individual trees where construction activities only occur during a short period.



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Pictures 4 & 5: Wooden boards carefully secured around the trunks can provide good protection where access is limited.



Picture 6: Where trees are off site, or public access is required through the work zone, boxing around the tree may be feasible.

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Hand digging operations

Excavations within RPAs: All excavation must be carried out carefully using hand tools, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air may be an appropriate alternative to hand digging, such as an air spade excavator (Image below), if available.



All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, fibrous roots should be retained or displaced temporarily beyond the excavation without damage.

Where excavations are required within RPAs, the advice below **must** be followed:

Advice for digging trenches

- All work within RPAs must be carried out by hand under close and recorded arboricultural supervision.
- Machines should not enter protective zones unless there is a suitable existing hard standing.
- Excavation of open trenches by machine is unacceptable within the protective zone. Wherever possible, trenchless techniques should be used.



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d. For trenchless installation of services, the pit excavations for starting and receiving machinery should be located outside the protective zone. The depth of run should be below 600mm. Techniques involving external mole lubrication with materials other than water should be avoided unless precautions are taken to ensure that there is no soil contamination within 600mm of the surface.

e. The broken trench technique combines hand dug sections of trench with trenchless techniques. The open trench is dug by hand with the same precautions as for continuous trenching described below. Open sections of trench should be kept as short as possible and only long enough to allow access for linking to the next section.



f. Continuous trenches should only be used where it is not possible to use either of the above techniques. The objective is to dig by hand and to retain as many roots as possible. Hand digging must be undertaken with great care to retain all roots greater than 25mm and to prevent damage to those retained.



g. Hand tools such as a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, a trowel and brush should be used to clear the soil away from them without damaging the bark. Any roots that need to be removed should be cut cleanly with sharp saw or secateurs 100–200mm behind the final face of the excavation

h. Backfilling should be carried out carefully to avoid direct damage to roots and excessive compaction of the soil around them. Where the finished surface will be hard standing, the backfill material around roots should be a mixture of top soil and a granular fill such as sharp sand to reduce excessive compaction and to secure a local aerated zone. On sites away from hard standing, backfill only with excavated soil.

i. Exposed roots should remain protected from drying out and extremes of temperature by insulating covering such as sacking.



Services: Excavation to upgrade existing services or install new services in RPAs may damage retained trees and should only be chosen as a last resort. In the event that excavation emerges as the preferred option, the decision should be reviewed by the supervising officer before any work is carried out. If excavation is agreed, all digging should be done carefully and follow the guidance set out above.

Material storage and pollution control

Loose building materials, chemicals and other pollutants that can contaminate the soil must be stored in locations outside the RPAs. If space around the site is limited, materials must be ordered in smaller/less frequent amounts to minimise excessive build-up of unused building materials. Where liquids or powder/granule products are required, precautionary measures of bunding or sealed frameworks should be sufficient to prevent contamination and must be designed so they are fit for purpose. If spillage or leakage occurs, there should be immediate procedures put in place to reduce further risk to the surrounding RPAs. All contributing contaminants must be moved away from the affected RPAs in a way that minimises harm to tree roots and the surrounding soil.



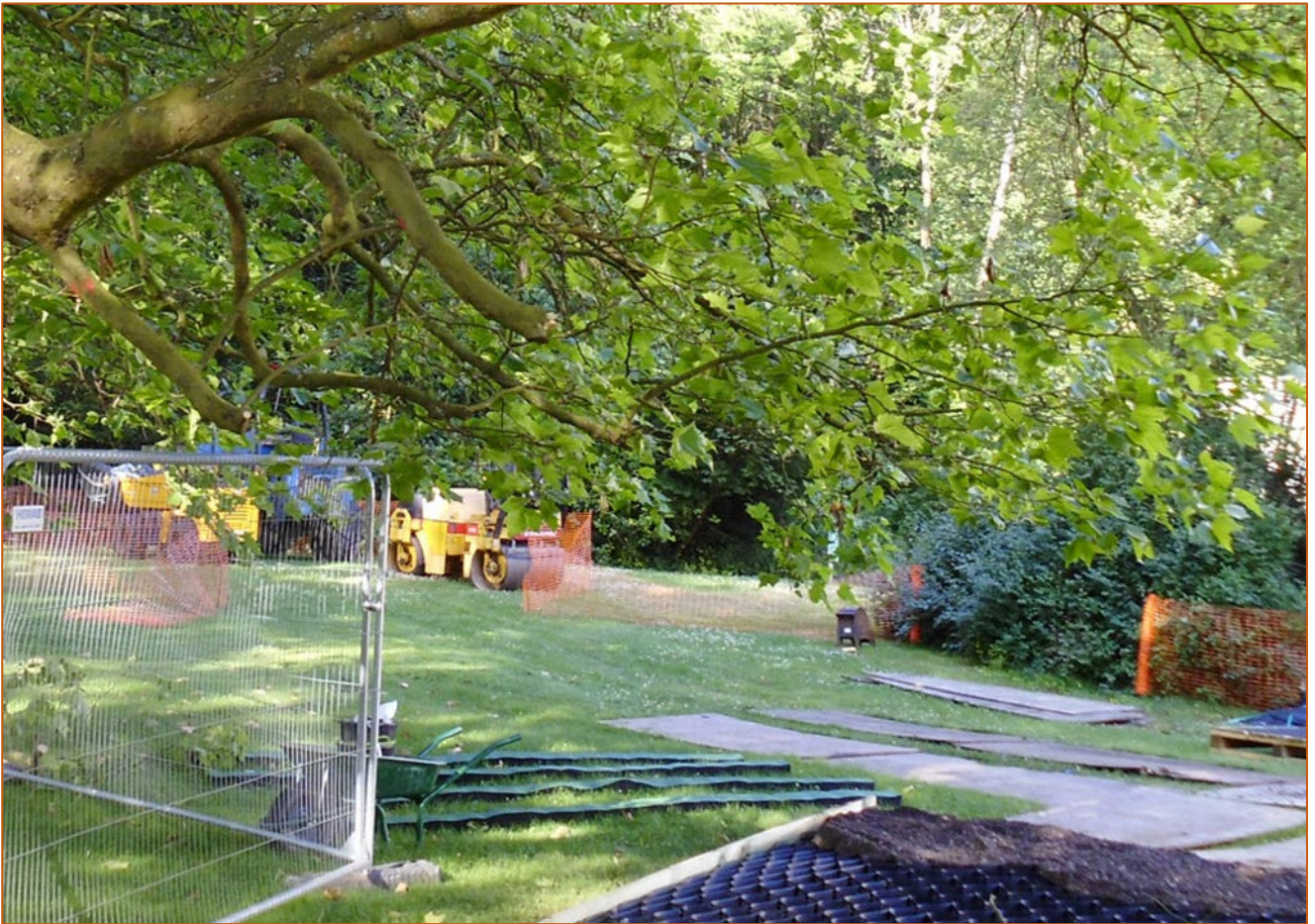
The following points must be adhered to:

Minimising harm from storage of pollutants

- The storage of fuels or toxic materials must be kept outside RPAs
- Emergency spillage kits must be available on site at all times to reduce the risk of accidents to the environment
- Where space is limited, contaminants must be kept safe using tailored containment systems fit for purpose.
- Cement washings must be contained to prevent leaching into the soil within RPAs
- Concrete pouring must be done in a way that ensures all RPAs within influencing distance are adequately protected. Liners should also be used where possible to prevent contamination.



Reinstatement/landscaping around trees



Landscaping works in RPAs: landscaping is usually the last stage of works and often the most important to minimise harm within RPAs. The re-profiling of existing soil levels and covering the soil surface with new plants or an organic covering (mulch). It does not include the installation of solid structures or compacted surfacing. Soft landscaping activity after construction can be extremely damaging to trees.

Minimising harm from reinstatement/landscaping works

- a. No significant excavation or cultivation, especially by rotovators, should occur within RPAs.
- b. Where new designs require levels to be increased to tie in with new structures or the removal of an existing structure has left a void below the surrounding ground level, good quality and relatively permeable top soil should be used for the fill.
- c. It should be firmed into place but not over compacted in preparation for turfing or careful shrub planting.
- d. Ideally, all areas close to tree trunks should be kept at the original ground level and have a mulched finish rather than grass to reduce the risk of mowing damage.
- e. All installations of light systems or other garden improvements that involve trenching works must be undertaken following the hand digging guidance above.

