

Pre-Development BS5837 Arboricultural Implications Assessment Western Terrace V9 (Version 9)

Produced for Mr and Mrs I Pratt



Arboriculture is the science and practice of cultivating, establishing, and managing amenity trees for the benefit of society.

Document Details

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Contents

1.	Introduction.....	4
2.	Site Details.....	5
3.	Statutory Tree Protection	7
4.	Summary of Findings.....	8
5.	Arboricultural Impact Assessment	10
6.	Arboricultural Method Statement.....	11
7.	Other Arboricultural Site Factors.....	21
Appendices		22
I.	Tree Details	22
II.	Cascade Chart for Tree Quality Assessment.....	26
III.	Protective Fencing Details	27
IV.	Temporary Ground Protection Layers.....	30
V.	Scope of Report.....	30

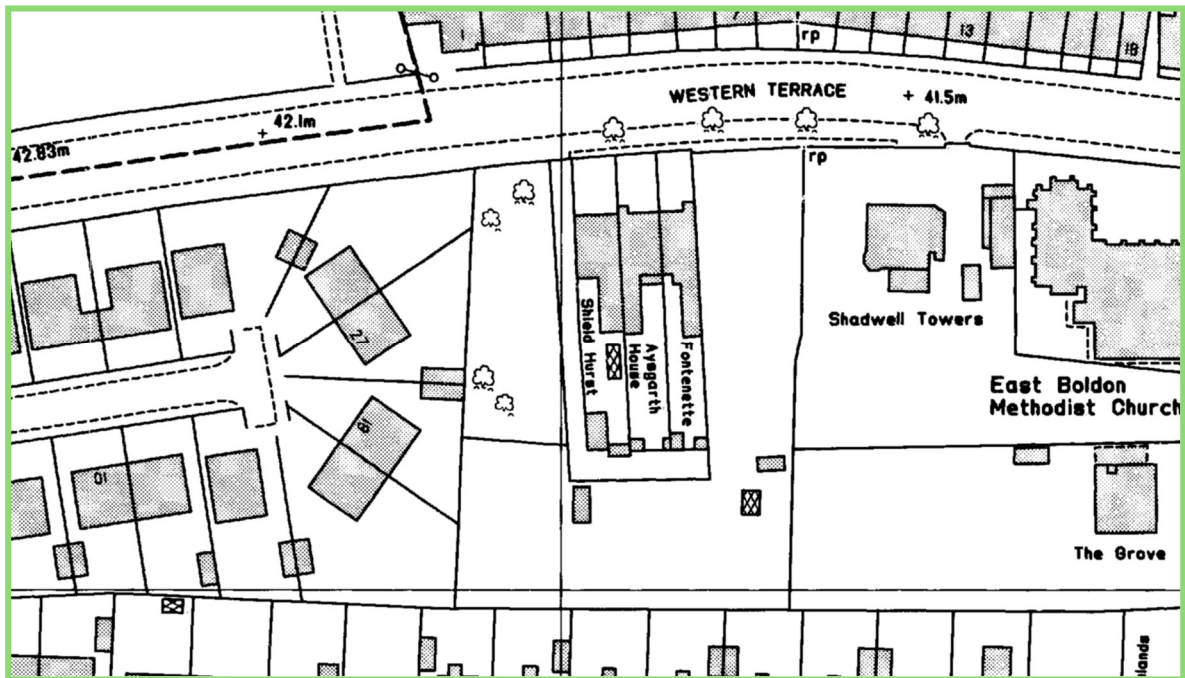
1. Introduction

- 1.1. Mr and Mrs I Pratt have commissioned this pre-development Arboricultural Impact Assessment report for the proposed development of a new residential property on Land at Western Terrace, Boldon, NE360RU.
- 1.2. The survey and resulting report have been produced to be submitted as part of the planning application for the site to the local planning authority and in accordance with the best practice guidelines set out in BS 5837 (2012) *Trees in Relation to Construction Sites: Recommendations*.
- 1.3. The site layout has been amended to draw the building back from retained trees, and full construction details for works within the Root Protection Areas (RPAs) are now available.
- 1.4. Documentation used in preparation of this report:
- Western Terrace - Sheet - (05)3001 - Existing Site Plan
 - PROPOSED SITE PLAN AMENDED
- 1.5. All observations have been made from ground level, without detailed inspection. Some measurements may have been estimated.
- 1.6. Woodsman were provided with a site plan of the area, with tree locations marked. An Arboricultural Constraints Plan (ACP) and Tree Protection Plan (TPP) have been produced to accompany this report. Tree locations and protective measures should be referenced to these plans.
- WArb.ACP.WesternTerrace.V4
 - WArb.TPP.WesternTerrace.V13

2. Site Details

2.1. Location

Land at Western Terrace, Boldon, NE360RU.



2.2. Site Description

The site is an area of historically derelict and overgrown land adjacent to Western Terrace.

2.3. Site Visit Details

The site was initially surveyed on 4 February 2022 during calm, clear weather conditions. Tree conditions have been checked in 2026.

2.4. Tree Cover

There are nine significant individual trees and two tree groups within the site's influence. Small trees with diameters below 150mm at 1.5m above ground level have not been surveyed in detail and are classified as having low retention value under BS5837 guidelines.

2.5. Recent Management

The trees have not undergone any significant recent management.

3. Statutory Tree Protection

3.1. Statutory Protection

Trees may be legally protected. Tree protection can include Tree Preservation Orders (TPOs) or Conservation Area status. The felling of large quantities of timber may also require a felling licence. Large penalties may be enforced for illegally carrying out work on protected trees. It is therefore advised that clarification of protection status be sought from the local planning authority prior to any tree works being carried out on the site. Where appropriate, permission for works must be applied for. Some exemptions to the above may apply, such as the removal of trees where full planning permission has been granted for new buildings to occupy the space where the protected trees lie.

3.2. Protection Search

Some of the trees on site are now protected by TPO 398 (2022). The TPO order was made on 18 May 2022.

The site is within the East Boldon Conservation Area.

4. Summary of Findings

4.1. Tree Cover

There are nine significant individual trees and two tree groups within the site's influence. Small trees with diameters below 150mm at 1.5m above ground level have not been surveyed in detail and are classified as having low retention value under BS5837 guidelines.

4.2. Recent Management

The trees have not undergone any significant recent management.

4.3. Amenity and Screening

Collectively, the trees provide the site with some amenity and screening.

4.4. Tree Removals

The proposed development will require removing two trees from group G1 and one from group G2. None of the removed trees is of high retention value.

4.5. Special Protection Requirements

Construction works and access are scheduled near retained trees within Root Protection Areas (RPAs). Special construction techniques and protective measures are therefore required.

Geosynthetics Ltd has provided a full specification for surfacing within RPAs.

4.6. Tree Retention

Providing that appropriate protective measures and construction techniques are enforced during development, the trees on site can be retained and should continue to provide amenity benefits for the site.

4.7. Impact on Tree Stock

The development will have a minor impact on the site's tree stock. No high-retention-value trees are scheduled for removal. Screening for the site will be retained.

4.8. Retained Tree Conflicts

Retained trees should not conflict with site usage.

4.9. Mitigation Re-planting and Landscaping

If desired, there is ample room on site to plant replacement trees to mitigate the initial losses.

5. Arboricultural Impact Assessment

5.1. Tree Removals

The proposed development will require removing two trees from group G1 and one from group G2. None of the removed trees is of high retention value.

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5.5. Retained Tree Conflicts

Retained trees should not conflict with site usage.

6. Arboricultural Method Statement

6.1. Protective Measures

The retained trees will need protection for roots, trunks, and branches during demolition and construction. The trees will be protected by erecting barrier fencing as depicted on the Tree Protection Plan.

6.2. Aerial Protection

Aerial protection should take the form of barrier fencing constructed as per BS5837 Guidelines. Alternative adequate construction methods may be allowed with prior approval.

6.3. Construction of Protective Fencing

6.3.1. Barriers should consist of a scaffold framework in accordance with BS 5837:2012 *Trees in relation to construction - Recommendations*; comprising a vertical and horizontal framework, well-braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weld-mesh panels should be securely fixed with wire or scaffold clamps. Weld-mesh panels on rubber or concrete feet are not impact-resistant and should not be used unless they are effectively pinned down and braced. The use of any alternative fencing method should be allowed only with prior approval from the site Arboricultural Consultant or the Local Planning Authority.

NOTE: The above is preferred because it is readily available, impact-resistant, reusable, and enables inspection of the protected area.

6.3.2. Protective fencing should enclose tree canopies in all areas where groundworks are not required (other than where canopies extend over parking and access routes).

- 6.3.3. The fencing will remain in place until completion of the development and will only be removed with the consent of the local planning authority to permit completion of the scheme.
- 6.3.4. Other than works detailed within this method statement or approved in writing by the local planning authority, no works, including storage or dumping of materials, shall take place within the Construction Exclusion Zones (CEZs) as defined by the protective fencing.
- 6.3.5. Protective Fencing Minimum Distances - The tree data table gives minimum distances from the trunk to protective fencing for retained trees. Wherever possible, fencing beyond these distances is desirable, and fencing should enclose tree canopies unless access beneath the canopy is necessary.

6.4. Construction Exclusion Zones

- 6.4.1. No access should be allowed into the CEZs during the development phase. No storage of building materials or other materials is allowed within the CEZs.
- 6.4.2. Once barriers and/or ground protection have protected the exclusion zones, construction work can commence. All weather notices should be erected on the barrier with words such as: "Construction Exclusion Zone — Keep out".
- 6.4.3. In addition, the following should be addressed or avoided:
 - A. Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights, can operate without contacting retained trees. Such contact can cause serious damage to them and may make their safe retention impossible. Consequently, any transit or traverse of plant near trees should be conducted under the supervision of a Banksman, to ensure that adequate clearance from trees is always maintained. In some circumstances, it may be impossible to maintain adequate clearance, thus necessitating access facilitation pruning.
 - B. Material which will contaminate the soil, e.g., concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of a tree stem.

- C. Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches, or trunk. This will depend on the size of the fire and the wind direction.
- D. Notice boards, telephone cables or other services should not be attached to any part of the trees.
- E. It is essential that allowance should be made for the slope of the ground, so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees. (Para BS5837)

6.5. Special Protection Requirements

Construction works for surfacing and access are scheduled near retained trees within Root Protection Areas (RPAs). Special construction techniques and protective measures are therefore required.

6.6. Principal Rules of No-Dig Construction

The principal rules of no-dig construction are as follows:

- No roots are to be severed
- Soil must not be compacted
- Oxygen and water must be able to diffuse into the soil beneath engineered surfaces
- The construction of the roads, footpaths or parking bays will have to be above the existing ground level and at least 1.5m away from the trunks of the retained trees.

6.7. No Dig Construction Method:

- 6.7.1. Construction should ideally be undertaken between May and October when the ground is at its driest and is less prone to compaction.
- 6.7.2. Ground vegetation should be carefully removed, with any organic material being removed, to prevent the build-up of anaerobic conditions beneath the surfacing, which will damage the tree roots.
- 6.7.3. No digging should take place within the protective zone, except for the careful removal of organic matter by hand tools. Hollows must be filled with sharp sand; any digging to remove rocks or protrusions must be by hand, taking care not to sever any roots over 2.5cm in diameter. Stumps should be ground out rather than excavated to prevent damage to the retained tree roots.

6.8. New Surfacing Within Root Protection Areas

- 6.8.1. New surfacing, such as re-surfacing and pathways, must use a non-compacting porous surface cellular confinement system. No changes to the ground level should be allowed before installation of the new surfacing, which should be installed above the existing ground level.
- 6.8.2. **Geosynthetics Ltd has provided a full specification for surfacing within RPAs. These types of details have been successfully approved elsewhere by planning departments across the country, uk wide.** The Geosyn.com design states that it allows for up to 44 tonnes of construction plant/details. These depth/level build-ups are acceptable and will suitably protect the tree root protection areas
- 6.8.3. **One build detail is provided for the application during construction. The detail with the 50mm top surface layer is proposed during the construction phase; then, as the project nears its end, the top part will be scraped off, and a top membrane will be laid, with an 80mm decorative layer applied over it.**

Build up based on a load up to 44T During Construction.

PARAMETERS-INFORMATION:

- Soil info: Cohesive as per SI
- CBR =3.0% used as maximum value in the calculation.
- Undrained Shear strength = 69Kpa (value used for calculation)
- Type of Traffic During construction: Trucks /Std construction traffic up to 44ton
 - Assumed maximum Gross Vehicle Weight GVW $\leq 44,000$ kg
 - Assumed maximum axle load $\leq 160\text{kN/axle}$
 - Assumed Wheel Load $\leq 80\text{kN/wheel}$
- Type of Traffic After construction: Delivery V's (7.5 tonnes)
 - Assumed maximum Gross Vehicle Weight GVW $\leq 9,000$ kg
 - Assumed maximum axle load $\leq 60\text{kN/axle}$
 - Assumed Wheel Load $\leq 30\text{kN/wheel}$

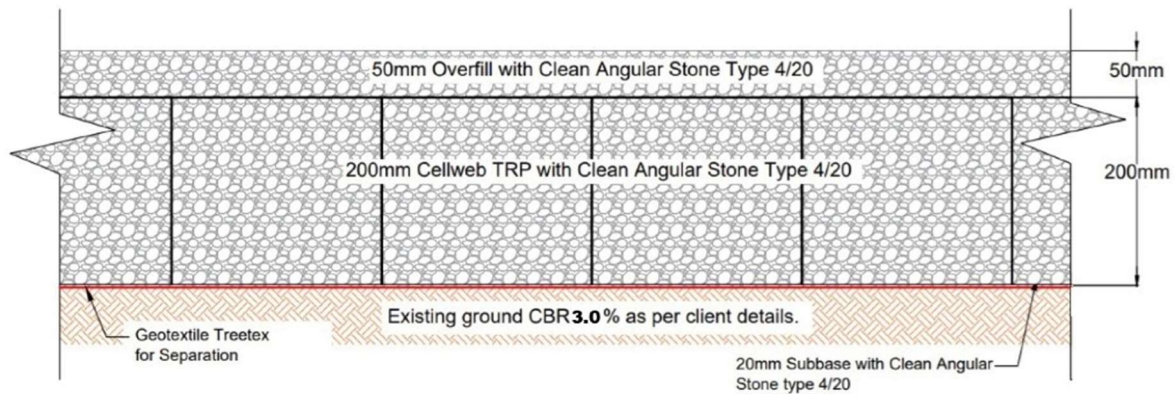
SOLUTION-BUILD-UP DURING CONSTRUCTION:

- 50mm type 3 wearing course.
- 1 layer Geotextile Treetex for separation
- 25mm Overfill with Clean Angular Stone Type 4/20mm
- **1 layer of Cellweb TRP 200mm** infill with Clean Angular Stone Type 4/20mm
- **0mm** Subbase with Clean Angular Stone Type 4/20mm (originally 40mm but reduced to zero due to surface depth 50mm wearing course during construction).
- 1 layer Geotextile Treetex, for separation

SOLUTION-BUILD-UP AFTER CONSTRUCTION:

- 80mm, 10mm -20mm generally in accordance with BS 13242, as per client details.
- 1 layer Geotextile Treetex for separation
- 25mm Overfill with Clean Angular Stone Type 4/20mm
- **1 layer of Cellweb TRP 200mm** infill with Clean Angular Stone Type 4/20mm
- **0mm** Subbase with Clean Angular Stone Type 4/20mm (originally 40mm but reduced to zero due to surface depth of 80mm Dense base during construction).
- 1 layer Geotextile Treetex, for separation

Cross-section: Cellweb Build-Up over TRP Area

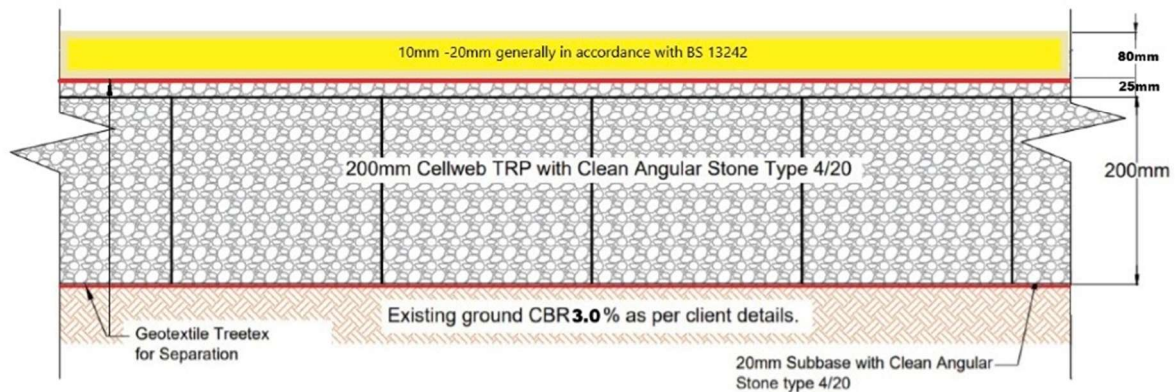


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Geosynthetics Ltd Ground Reinforcement & Geotextiles Tel: 01663 417139 Fax: 01663 417140 www.geosyn.co.uk	Project: Western Terrace	Description: Cellweb build-up in a TRP Zone	Drawn By: JMK	Scale: NTS	Date: 1/1	Checked By: JMK
			Ref: TR22-4156_RUR_CEL	Version: V1	Sheet: 1/1	

Cross-section: Cellweb Build-Up over TRP Area



DISCLAIMER:

"Any calculations produced by us for you are provided for your assistance only and do not constitute any warranty as to fitness for purpose of any of our products in respect of any specific construction. It is your responsibility to determine the suitability of our products within a particular construction. Our calculations are based entirely on the information provided by you and/or any assumptions made by us in good faith. We shall not be liable to you, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss arising in consequence of incorrect, inaccurate or incomplete information provided to us by you or arising as a consequence of reasonable assumptions made by us in good faith. Any advice (including any calculations) that we give to you in any form is provided solely for your own use and we shall not be liable to any third party, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss arising as a result of or in connection with such advice."

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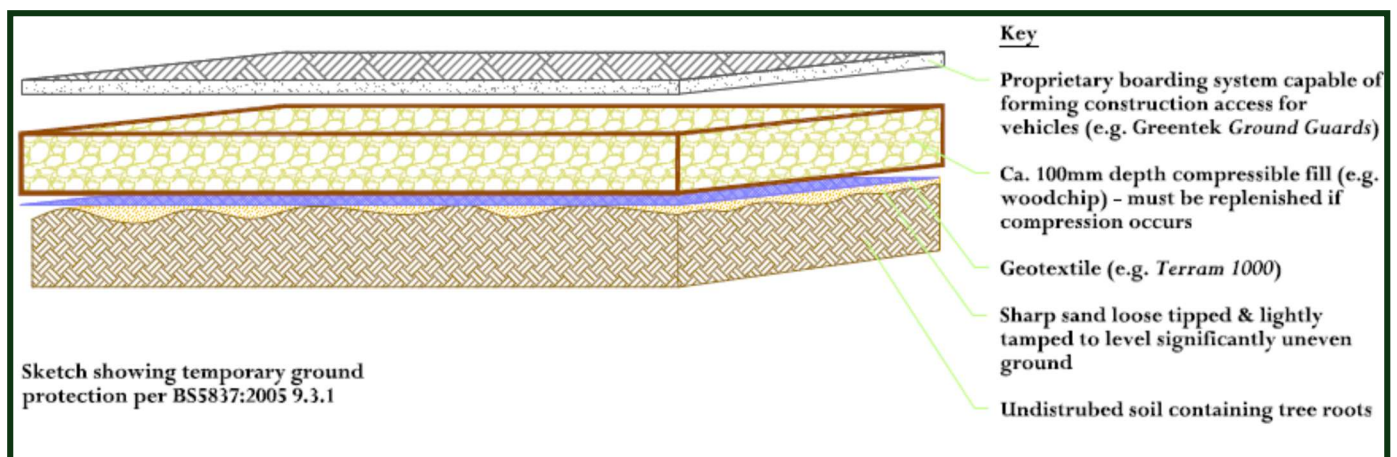
6.9. Ground Protection During Works Within CEZs

Note – Wherever permanent surfacing will be required on site, the build-up will be constructed from the start with no temporary ground protection. Temporary protection is only required for light access over areas without permanent surfacing in the final site layout.

Where required, a practical solution for ground protection in areas requiring special construction techniques is to install a temporary surface to reduce ground compaction. This should take the form of a multi-layered protective barrier as detailed below:

Temporary Ground Protection Layers

- Base Layer – Undisturbed soil containing tree roots.
- Layer 1 – Sharp sand loosely tipped and lightly tamped, to level uneven ground.
- Layer 2 – Geo-textile (e.g. *Terram 1000*).
- Layer 3 – Minimum 10cm depth of compressible fill (e.g. woodchip) – **must be replenished if ongoing compression occurs.**
 - 10cm depth of compressible fill, allowable for pedestrian access only.
 - 15cm depth of compressible fill, allowable for up to 2t Gross Weight.
 - Traffic exceeding 2t Gross Weight requires base layer of ground guards, in addition to other layers detailed here.
- Layer 4 - Top layer – temporary boarding system capable of forming construction access for vehicles (e.g. *Greentek Ground guards*). (Or possibly lighter surfacing for foot access only)



6.10. Tree Works

All tree pruning and removal works must conform strictly to BS3998 (*Recommendations for Tree Works*) and must use target pruning in accordance with best practice. All on-site staff should be briefed on the protective measures to be enforced. Construction should not proceed until protective measures are installed, and they should remain in place throughout the construction phase. Only once the construction phase is completed in its entirety should the protective fencing be removed

6.11. Schedule of Arboricultural Works

Pre-Commencement		
Action	Notes	Arb Supervision
Pre-commencement site meeting.	Site meeting with the supervising arborist, the site manager and the LPA representative. (on-site or online)	Required
Arboricultural Operations Pre- Commencement		
Action	Notes	Arb Supervision
Pre-commencement tree works	Review requirements with the tree contractor. Mark trees and monitor work where necessary. Conduct tree felling and tree pruning works.	Advised
Installation of protective measures	Marking of protective areas and measures. Protective measures installation and checking.	Required
Development Construction Phase		
Action	Notes	Arb Supervision
Monitoring of tree protection measures	Regular checks to ensure protective measures remain in place. (Checks can be via video call, where appropriate)	Advised
Supervision of high-risk works.	Direct supervision of any sensitive site works deemed a significant risk to retained trees. – Such as the movement of a major plant in proximity to the tree crowns.	Advised
Construction works within RPAs	Direct supervision of construction works within Root Protection Areas – including surface and foundation construction and utility excavations.	Essential
Post Construction		
Landscaping works within RPAS	Post-construction landscaping	Advised
Removal of protective measures	Removal is authorised only where there is no risk of damage to the Root Protection Area from construction activity.	N/A
Completion	Development works complete	N/A
Final tree condition check	Final check of tree conditions post-development. Possible remedial tree works or ground amelioration are advised.	Advised
Note: When appropriate, some supervision and site checks may be conducted via video conference or submission of photographic records		

6.12. Arboricultural Supervision

6.12.1. Tree protection measures on this site are complex, and special construction and protection techniques are required. Ongoing Arboricultural supervision is therefore considered essential at key stages in the development.

6.12.2. Any deviation from the prescribed method statement or the occurrence of any unforeseen damage to the site's trees must be immediately reported to the Arboricultural Consultant. All work on site must be halted immediately. The Consultant will make a site visit to assess the extent of the damage or deviation from the prescribed method statement and any resulting works required. The local authority planning department may be informed, and the Consultant will provide a written assessment of any such damage or deviation from the prescribed method statement.

7. Other Arboricultural Site Factors

7.1. Recent Management

The trees have not undergone any significant recent management.

7.2. Future Management

Regular maintenance may be required to keep trees in good condition.

7.3. Ivy Cover

Heavy Ivy or vegetation cover on trees can obscure views and effective assessment of structural conditions. Severing Ivy, or removing other vegetation, can allow proper assessment of structural conditions following dieback. This must be balanced against the ecological value of the habitat that Ivy and other vegetation provide.

7.4. Protected Wildlife

- 7.4.1. It is an offence under the Wildlife and Countryside Act 1981 (WCA and amendments) and the EU Habitats Directive to disturb and/or destroy the nests of bats, birds, and other protected wildlife. Birds are protected by the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way Act 2000 (CROW Act). Bats are protected by the Wildlife & Countryside Act 1981 (WCA) and the Conservation of Habitats and Species Regulations 2010
- 7.4.2. No visual signs were found to indicate the presence of bats in the surveyed trees. However, several trees within the study area exhibit characteristics favourable to bats; as such, caution is warranted.
- 7.4.3. For birds, as with bats, there is an obligation to carry out visual checks prior to works commencing. Where possible, tree work should be carried out outside the bird nesting season.

Appendices

I. Tree Details

- **Tree number:** An individual identifying number – usually relating to the tree tag.
- **TPO:** Detail of Tree Preservation Order tree or group number
- **Common Name (Botanical Name):** Species identification is based on visual field observations. (Botanical name in brackets)
- **Retention Category:** For Retention category grading, see the cascade chart
- **Age Category:** Either an estimate (or statement if accurately known) of the age of the tree, classified as:
 - **Y** = Young tree; established tree, usually up to one third of its expected ultimate height and spread
 - **MA** = Middle-aged tree; very well-established, usually between one-third and two-thirds of its ultimate height and spread.
 - **M** = Mature tree; almost at full height but still increasing in girth & spread.
 - **OM** = Over-Mature tree; grown to full size and becoming senescent.
 - **V** = Veteran tree; individuals surviving beyond the typical age range for the species
- **Stem Diameter:** Trunk diameter measured at 1.5 metres from ground level and recorded in millimetres. (Number of stems – MS = Multi-stemmed)
- **Height:** Height is estimated in metres. (Lower crown height - Height in metres of crown clearance above adjacent ground level)
- **Crown Spread:** Measurement of canopy from the trunk in metres - North, South, East, and West
- **Useful Life Expectancy:** Estimated Safe Useful Life Expectancy (SULE). Short: 0 – 10years. Medium: 10– 20 Years. Intermediate: 20-40. Long: 40 + years.
- **Condition:** Physiological Condition
 - Good = Healthy tree with good vitality.
 - Fair = Moderate health and vitality. Normal or slightly less for species and age.
 - Poor = Poor shape or form. Signs of crown decline may indicate structural weakness.
 - Dead = dead or dying tree
- **Comments:** Notes on tree condition and other points of interest.
- **Recommendations:** Management recommendations – actions required.
- **Work Priority:**
 - A - Works to achieve safety or to facilitate development.

- B - Works to achieve higher levels of arboricultural management.
 - C - To improve the aesthetic appearance.
- **Root Protection Area (Radius) m:** The distance at which the protective barrier should be erected, measured in a radius.
- **Root Protection Area m2:** The area of the RPA required.
- **Root Protection Area (m):** The RPA area as a square.
- **Bat Roost Potential:**
 - 0 - None – No significant bat roost features.
 - 1 - Low – Only minor significant bat roost features.
 - 2 - Moderate – Some notable bat roost features.
 - 3 - High – Significant or multiple bat roost features.
 - 4 - Confirmed – Confirmed bat roost.
- **Potential for Future Growth:**
 - H – High potential for future growth; A substantial increase in tree dimensions can be expected.
 - M – Medium potential for future growth; A significant increase in tree dimensions can be expected.
 - L – Low potential for future growth; A small increase in tree diminutions can be expected.
 - N – No potential for future growth; tree is considered to be at full size, or only very slow growth is anticipated.
- **Pruning:** Removal of living or dead parts of a tree.
- **Crown Cleaning:** The removal of dead, dying, or diseased branch wood. Broken or crossing branches. Stubs left from previous tree surgery operations. Unwanted objects. Ivy, other climbing plants, and general debris/rubbish.
- **Deadwood Removal:** Removal of significant dead or dying branches and limbs from the tree.
- **Crown Lifting:** Removal of all growth and branches below the specified height.
- **Crown Reduction:** Reduction of the complete outline of the canopy, pruning to appropriate growth points and leaving a natural silhouette.

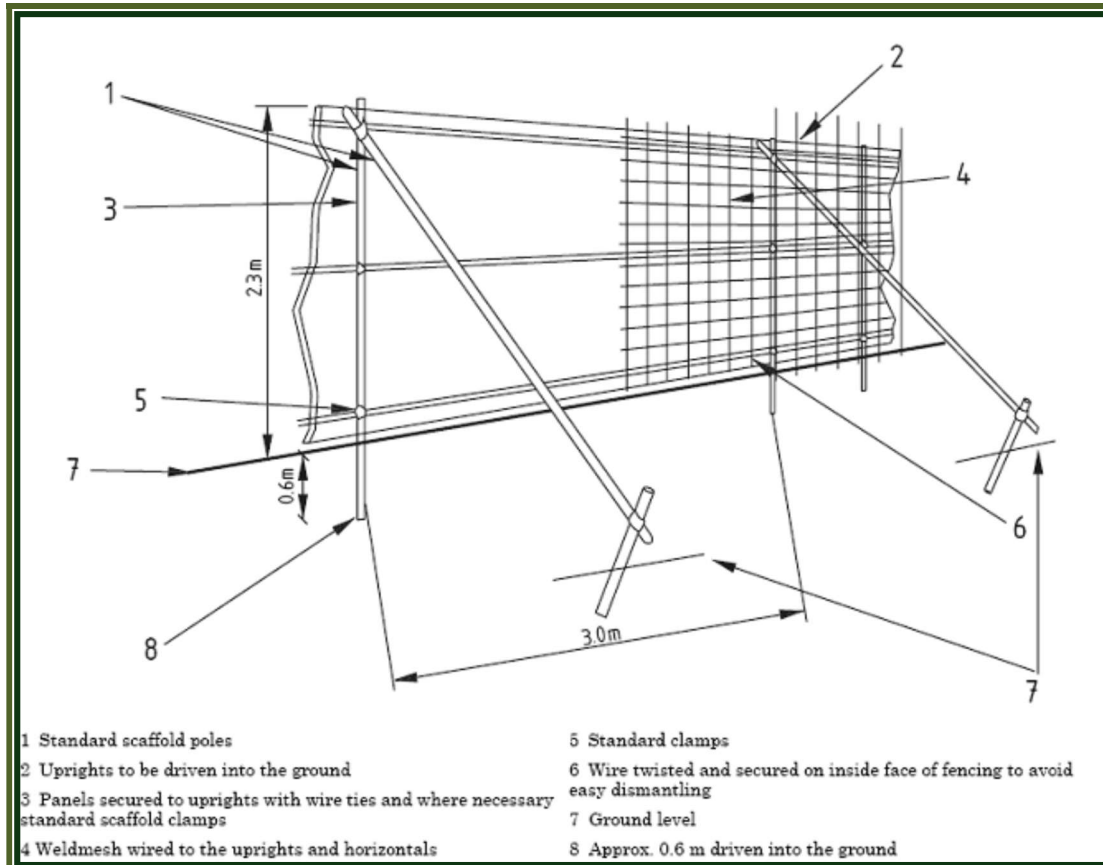
Tag	TPO	Name (Botanical name)	Retention Category	Age Category	Mean Diameter - mm (No of Stems)	Height -m (Lower Crown Height) (Significant Branch)	Condition	Useful Life Expectancy	North	South	East	West	Comments	Recommendations	Works Priority	Root Protection Area – Radius (m)	Root Protection Area – Area) (m2)	Likelihood of Protected Species Occupancy	Growth Potential
T1	(T1)	Acer pseudoplatanus (Sycamore)	B2	EM	350(2)	14(4)(4)	Fair	20+	8	4	7	5	Ivy on the tree. Stem divides below 1.5m. Included bark present in the fork.	Sever Ivy. Retain. New surfacing within RPA.	C Arb Management	5.94	110.9	Negligible	H
T2	(T2)	Acer pseudoplatanus (Sycamore)	B2	EM	300(2)	14(2)(3)	Fair	20+	7	4	5	4	Ivy on the tree. Stem divides below 1.5m. Included bark present in the fork. Low branches over the road/footpath. Branches cut back to the boundary. Dead third stem below 1.5m.	Sever Ivy. Remove major deadwood. Crown lift to 3m over the footpath. Crown lift to 5m over the road. Remove the dead stem. Retain. New surfacing within RPA.	A Safety	5.09	81.4	Negligible	H
T3	(T3)	Acer pseudoplatanus (Sycamore)	B2	EM	300(2)	14(2)(1)	Fair	20+	7	4	4	3	Previously crown raised. Ivy on the tree. Stem divides below 1.5m. Low branches over the road/footpath.	Sever Ivy. Retain. New surfacing within RPA.	C Arb Management	5.09	81.4	Negligible	H
T4	(T4)	Acer pseudoplatanus (Sycamore)	B2	EM	300(2)	15(4)(4)	Fair	20+	6	4	3	9	Ivy on the tree. Stem divides below 1.5m. Included bark present in the fork. Branches restricting highway light.	Sever Ivy. Prune the tree clear of the road light. Retain. New surfacing within RPA.	C Arb Management	5.09	81.4	Negligible	H
T5	(T5)	Acer pseudoplatanus (Sycamore)	B2	EM	300(3)	14(4)(4)	Fair	20+	8	9	7	5	Unable to inspect the stem due to Ivy. Stem divides below 1.5m. Included bark present in the fork. Deadwood in the crown	Sever Ivy. Remove major deadwood. Prune clear of the building. Retain. New surfacing within RPA.	C Arb Management	6.24	122.3	Negligible	H
T6	(T6)	Acer pseudoplatanus (Sycamore)	B2	EM	500(4)	14(4)(4)	Fair	20+	8	8	7	5	Ivy on the tree. Stem divides below 1.5m. Included bark present in the fork. Branches cut back to the boundary.	Retain. New surfacing within RPA.	None	12	452.5	None	H
T8	(T8)	Acer pseudoplatanus (Sycamore)	B2	EM	400(1)	14(3)(0)	Fair	20+	7	5	7	7	Ivy on the tree.	Retain. Box off trunk. Construction within RPA. Crown lift to give 5m clearance from ground level.	B Development	4.8	72.39	Low	M
T9	(T9)	Acer pseudoplatanus (Sycamore)	B2	EM	350(1)	12(6)(5)	Fair	20+	5	7	6	5	Ivy on the tree. Unable to inspect the stem due to Ivy.	Sever the Ivy at the base. Retain RPA fenced off	C Arb Management	4.2	55.42	None	H

Tag	TPO	Name (Botanical name)	Retention Category	Age Category	Mean Diameter - mm (No of Stems)	Height -m (Lower Crown Height) (Significant Branch)	Condition	Useful Life Expectancy	North	South	East	West	Comments	Recommendations	Works Priority	Root Protection Area – Radius (m)	Root Protection Area – Area) (m2)	Likelihood of Protected Species Occupancy	Growth Potential
G1	(No)	Acer pseudoplatanus (Sycamore)	C2	SM	300(7)	10(2)	Poor	10+	6	6	6	5	Part of a linear group. Lapsed Pollard. Weak attachment points. Decay is present on the stem. Included bark present in the fork.	Remove x2 stems to the south of the group. Re-pollard remaining trees. Box off trunks. Construction within RPA.	B Development	9.53	285.4	None	H
G2	(G1)	Prunus avium (Wild Cherry)	B2	EM	350(2)	15(1)(1)	Fair	20+	7	5	4	6	Ivy on the tree. Unable to inspect the stem due to Ivy. Exudation on the stem. Stem divides below 1.5m. Included bark present in the fork. (X1 Cherry X1 Whitebeam – TPO states x2 Cherries)	Remove x1 stem to the north of the group. Crown raise the remaining tree to give 5m clearance from ground level. Box off trunk. Construction within RPA.	A Safety Development	5.94	110.9	None	M

II. Cascade Chart for Tree Quality Assessment

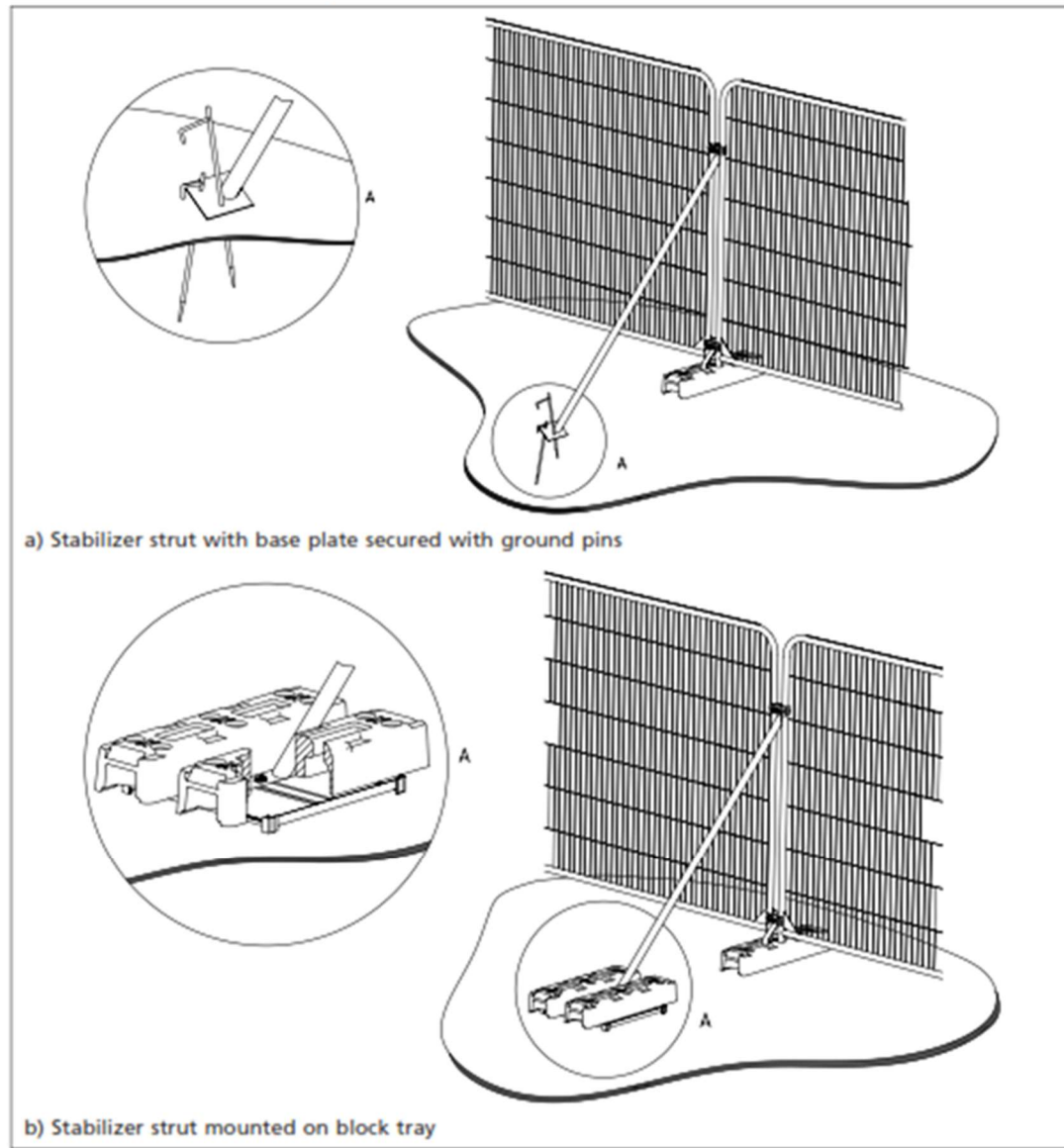
Category and definition	Criteria			Identification of the plan
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g., where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning. ☐ Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline ☐ Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees that suppress adjacent trees of better quality <i>NOTE: Category U trees may have existing or potential conservation value that may be desirable to preserve.</i>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification of the plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal Arboricultural features (e.g., the dominant and/or principal trees within an avenue)	Trees, groups, or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of importance (e.g., avenues or other arboricultural features assessed as groups)	Trees, groups, or woodlands of significant conservation, historical, commemorative, or other value (e.g., veteran trees or wood pasture)	LIGHT GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g., presence of remediable defects, including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semiformal arboricultural features (e.g. trees of moderate quality within an avenue that includes better category A specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits.	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm	Trees not qualifying in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits	GREY
	NOTE: Whilst Category C trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.			

III. Protective Fencing Details

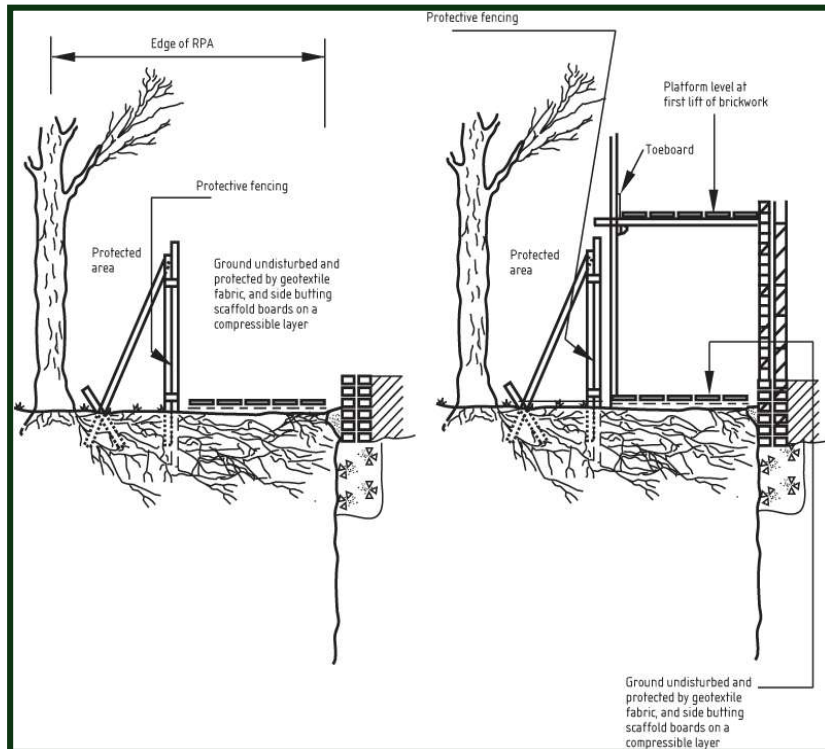


Protective Fencing with Above-Ground Stabilisation

Figure 3 Examples of above-ground stabilizing systems



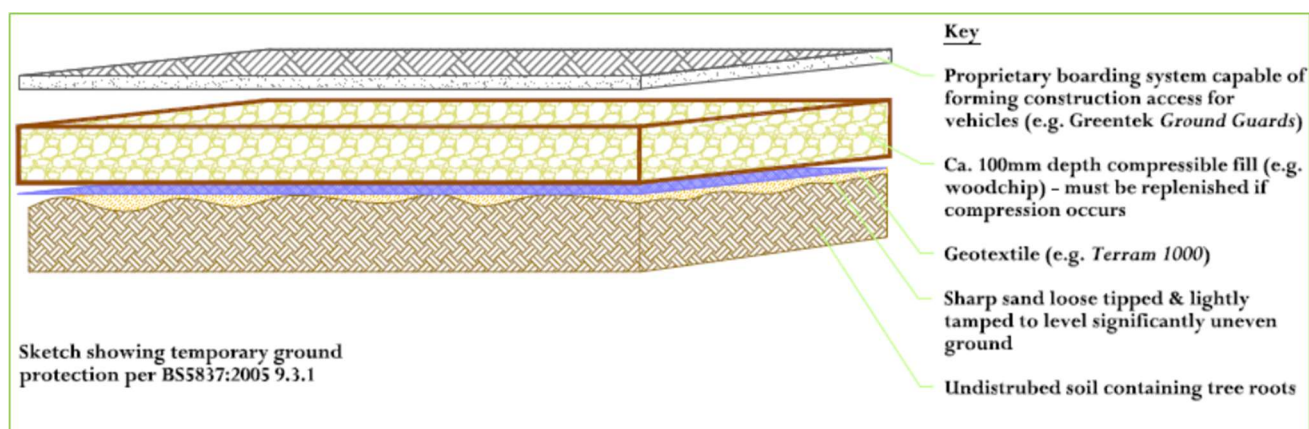
Erection of Scaffolding Within Root Protection Areas



Signs for Placement on Protective Fencing



IV. Temporary Ground Protection Layers



V. Scope of Report

This report has been produced to fulfil planning requirements and to ensure that best practice procedures are enforced before construction design, in accordance with BS 5837 (2012), *Trees in relation to construction: Recommendations*. Tree conditions and amenity values have been assessed to determine their suitability for retention during and after the proposed construction, in accordance with BS 5837. (2012)

a. Limitations

This report has not been designed as a hazard assessment or safety report and should not be used as such. As such, only major visual tree defects are commented upon where appropriate. This report makes no comment on any tree's ability to cause direct or indirect damage to buildings, walkways, and other utilities, except where direct pressure damage is immediately and obviously foreseeable. Trees are dynamic, changing structures, and this report comments on tree condition as assessed on the day of the survey.

Please note that where trees near are selectively removed, other adjacent specimens are initially more prone to failure due to increased wind loads. Given time, healthy trees can adapt to this increased wind stress. Further to this report, it is recommended that all trees in areas where failure may pose a significant risk of damage to people or property be assessed for hazards annually to fulfil the owner's duty of care.

b. Survey Methodology

All trees were assessed from ground level only, using visual assessment techniques. Heights and crown spreads have been measured using a laser hypsometer. Tree diameters have been measured using a girth tape at 1.5m, or where multi-stemmed, immediately above the root flare, as prescribed in the BS: 5837: 2012 *Trees in relation to construction - Recommendations*. No further inspection beyond this visual assessment has been carried out. Some measurements may have been estimated.