

Pre-Development BS5837 Arboricultural Implications Assessment Western Terrace V7. (Version 7)

Produced for Mr and Mrs I Pratt

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Document Details

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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. Documentation used in preparation of this report:

- Western Terrace - Sheet - (05)3001 - Existing Site Plan
- Western Terrace - Sheet - (05)3006 - Proposed Site Plan

1.4. All observations have been made from ground level, without detailed inspection. Some measurements may have been estimated.

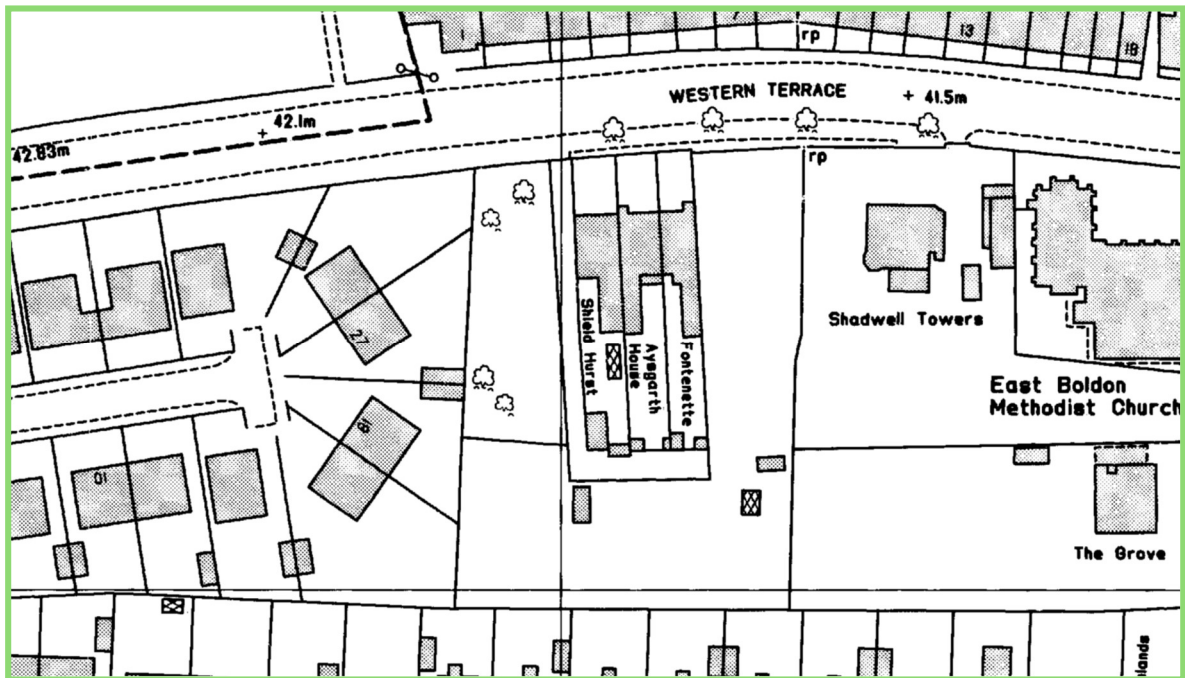
1.5. Woodsman were provided with a site plan of the area, with tree locations marked on. An Arboricultural Constraints Plan (ACP) and Tree Protection Plan (TPP) have been produced to accompany this report. Tree locations and protective measures should be referenced to these plans.

- ACP.WesternTerrace.No2
- TPP.WesternTerrace.No11

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 surveyed on the 4th of February 2022 during calm clear weather conditions.

2.4. Tree Cover

There are eleven significant individual trees and three tree groups within influence of the site. Small trees below 150mm in diameter, at 1.5m in height from ground level, have not been surveyed in detail and are classified as low retention value, as per BS5837 guidelines.

2.5. Recent Management

The trees have had no 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 works 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 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, occupying 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 the 18th of May 2022.

4. Summary of Findings

4.1. Tree Cover

There are eleven significant individual trees and three tree groups within influence of the site. Small trees below 150mm in diameter, at 1.5m in height from ground level, have not been surveyed in detail and are classified as low retention value, as per BS5837 guidelines.

4.2. Recent Management

The trees have had no 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 the removal of one low retention value tree group. None of the removed trees are 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.

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 provide amenity benefits for the site into the near future.

4.7. Impact on Tree Stock

The development will have a minor impact on the sites 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 for the initial losses.

4.10. Additional Measures and Concerns

The site has a significant root barrier in the form of the existing driveway. Barriers result in asymmetrical root growth discounting the indicative Root Protection Areas (RPAs). Normal construction techniques are considered appropriate where the existing driveway has discouraged root growth.

5. Arboricultural Impact Assessment

5.1. Tree Removals

The proposed development will require the removal of one low retention value tree group (G1 'topped' Sycamores). None of the removed trees are of high retention value.

5.2. 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.

5.3. Tree Retention

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

5.4. Impact on Tree Stock

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

5.5. Retained Tree Conflicts

Retained trees should not conflict with site usage.

5.6. Additional Measures and Concerns

The site has a significant root barrier in the form of the existing driveway. Barriers result in asymmetrical root growth discounting the indicative Root Protection Areas (RPAs). Normal construction techniques are considered appropriate where the existing driveway has discouraged root growth.

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 resistant to impact and should not be used unless they are effectively pinned down and braced. The use of any alternative method of fencing should only be allowed following prior approval from the site Arboricultural Consultant or the Local Planning Authority.

NOTE: The above is preferred because it is readily available, resistant to impact, can be re-used 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 then only 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 works access should be allowed into the CEZs during the development phase. No storage of any building materials or any other materials should be allowed within the CEZs.
- 6.4.2. Once the exclusion zones have been protected by barriers and/or ground protection, 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 result in serious damage to them and might 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 maintained always. 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. Principle 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 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

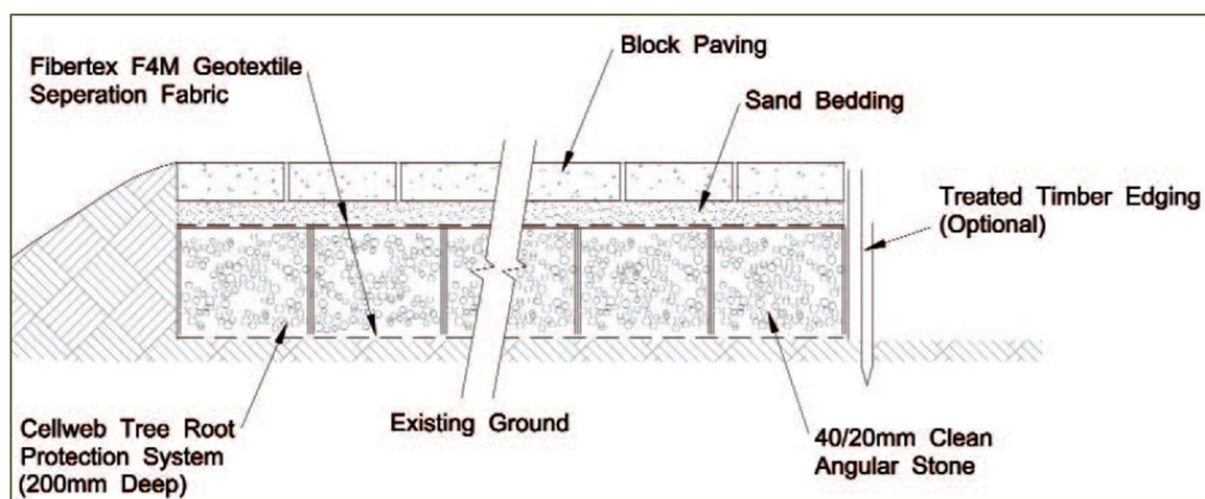
- 6.8.1. New surfacing, such as re-surfacing and pathways, must use a non-compacting porous surface such as Cell Web (from Geosynthetics), or a similar cellular confinement system. No changes to ground level should be allowed prior to installation of new surfacing, which should be installed above the existing ground level.
- 6.8.2. Installation of Permeable Surfacing - The construction method below is suitable for the construction of permeable surfaces. It is not a finished engineering solution. It is a methodology designed to allow the construction without damaging the nearby tree root systems.
 - Lay a non-woven geotextile (Fibretext F4M or similar) on to the existing sub-grade. - Overlap dry joints by 300mm
 - Lay and expand the cellular confinement system (Cellweb) and anchor open during infilling.
 - Fill the cellular confinement system with a minimum of 75mm of aggregate (75mm is the minimum depth for domestic traffic). The aggregate should not contain any fines and be of an inert type of material, such as whinstone chips, rather than any lime-

based product. The angular particle dimensions should be 20-40mm. As most urban soils are already alkaline in nature, the use of dolomite, limestone or crushed concrete is not suitable for this application. This is because they can react with rainwater, with the potential to change the soil pH and form impenetrable layers, which impede water movement and gaseous exchange.

- Place the final surface material. -
 - **Block Paving** – lay a second layer of Fibrex F4M Geotextile separation fabric, over the in-filled Cellweb sections. Lay a sharp sand bedding layer, compacted with a vibro compaction plate, to recommended depth. Place pavers as per the manufacturer's instructions. The use of porous blocks, such as Aquaflow by Formpave, are particularly tree friendly and allow natural rainfall to reach the rooting area.
 - **Porous tarmac** – place 25mm surcharge of the granular material above the Cellweb system and lay the bitumen base and wearing course.
 - **Loose Gravel**- Place a second layer of Geotextile separation fabric over the in-filled Cellweb sections. Place decorative aggregate to the required depth. A treated timber edge should be provided, to restrict gravel movement.
 - **Grass blocks or gravel in-filled blocks** - Lay a second layer of Geotextile separation fabric over the in-filled Cellweb sections. Place 50/50 rootzone bedding layer to the required depth. Lay recycled Duo Block 500 Grass protection system in-filled with 50/50 rootzone mix. Seed as required. Alternatively, the grass blocks may be in-filled with gravel.
 - **Edging** - supports such as angled steel section are advised, although there are varying kerbing options available which do not require any excavation and could be used above the existing ground level. Edging material must not encroach into the protected area. The use of conventional kerbing is not possible, as the depth of excavation required for their installation will sever the tree roots.
 - Wherever footpaths go through a protective zone, it is often not possible to erect the normal, permanent, and protective fencing, at the correct distance from the tree, whilst maintaining access to construct the hard surfacing. The permanent protective fencing must be erected as per the plan, as close to the edge of the working area as possible. Extreme care must be taken to avoid damage to

unprotected areas prior to the surfacing system being laid. Access must be prevented, especially to vehicles and plant. Temporary Heras fencing should be erected at the distance indicated on the Tree Protection Plan, until the hard surfacing is constructed.

New Surfacing Within Root Protection Areas (Example Diagram)



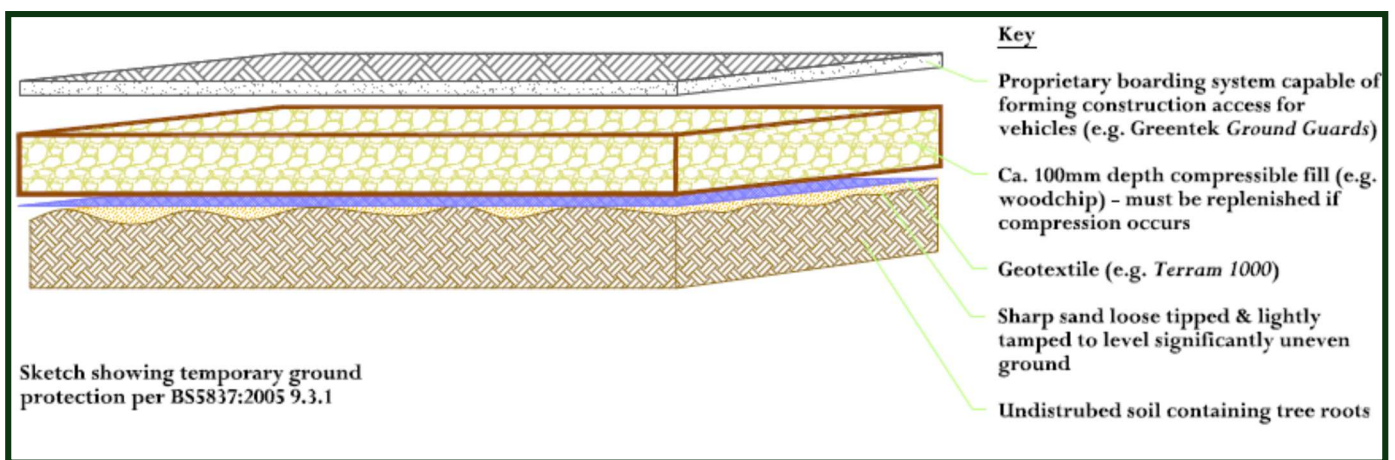
6.9. Ground Protection During Works Within CEZs

Where required, a practical solution to ground protection within areas requiring special construction techniques, is the installation of 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 on-going 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

- 6.10.1. 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 staff on site should be briefed regarding the protective measures to be enforced. Construction should not proceed prior to the installation of the protective measures, and these should remain in place for the entire duration of 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

Stage	Works	Arboricultural Supervision
1	Provide site managers with a copy of Arboricultural report.	
2	Tree works: - Remove G1. Grind out stumps. - Prune crowns of G2 back to give 2m clearance from new building.	
3	<i>Optional</i> tree work recommendations: See tree data table for general management recommendations.	
4	Install protective fencing and information signs as depicted on the Tree Protection Plan. – Box of trunks of G2.	Advised
5	Installation ground protection as depicted on the Tree Protection Plan.	Required
6	Tree Protection Plan to be mounted in works cabins/vans.	
7	Brief all site staff regarding protective measures (on-going).	Advised
8	Construction/Surfacing within Root Protection Areas.	Required
9	Construction Phase – including all further construction and landscaping works.	
10	De-install protective fencing – only once all other development activity is completed.	Advised
11	Re-assess site trees for general condition, possible damage, and remedial works requirements.	Advised
12	Completion.	

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 necessary 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 works 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 will also be immediately informed, and the Consultant will provide them with a written assessment of any such damage, or deviation from the prescribed method statement.

7. Other Arboricultural Site Factors

7.1. Hazard Trees

Some trees including are in very poor structural condition and require removal or remedial pruning, to maintain them in an acceptable regardless of development proceeding. These recommendations are in the tree data table but not in the schedule of works for the development.

7.2. Recent Management

The trees have had no significant recent management.

7.3. Future Management

Some regular maintenance may be required to maintain trees in a good condition.

7.4. Ivy Cover

Heavy Ivy or vegetation cover on trees can obscure views and effective assessment of structural conditions. Severance of Ivy, or removal of other vegetation, can allow for proper assessment of structural conditions following dieback of the vegetation. This must be balanced with the ecological value of the habitat that Ivy and other vegetation can offer.

7.5. Protected Wildlife

7.5.1. 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 (or CROW) Act 2000. Bats are

protected by; The Wildlife & Countryside Act 1981 (WCA) and the Conservation of Habitats and Species Regulations 2010

- 7.5.2. No visual signs were found to indicate the presence of bats in the surveyed trees, although several trees within the study area display characteristics found favourable to bats, and as such caution must be exercised.
- 7.5.3. For birds, as with bats, there is an obligation to carry out visual checks prior to works commencing. Where possible, tree works should be carried out to avoid the bird nesting season.

Appendices

I. Notes on Tree Assessment

The trees on site have been assessed and categorised as follows according to BS 5837 (2012) *Trees in Relation to Construction Sites: Recommendations*.

Category U Trees:

Trees unsuitable for retention. 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.

Category C Trees:

Those of low quality and value: Currently in adequate condition to remain until new planting could be established, or young trees with a stem diameter below 150mm. These trees, although of some value, should not be allowed to affect the design of the site layout, as they can easily be replaced.

Category B Trees:

Those of moderate quality and value: Those in such a condition as to make a significant contribution for a minimum of twenty years. Site design should where practicable, retain these specimens.

Category A Trees:

Those of high quality and value: Those in such a condition, as to be able to make a substantial contribution for a minimum of forty years. Site design should seek to retain these trees, wherever it is practicable to do so.

II. Tree Details

Tree Table Details

- **Tree number:** An individual identifying number – usually relating to 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 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 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 decline in the crown, may have structural weakness.
 - Dead = dead or dying tree
- **Comments:** Notes on tree condition and other points of interest.
- **Recommendations:** Management recommendations – actions required.
- **Works Priority:**
 - A - Works to achieve safety or to facilitate the 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 RPA required.
- **Root Protection Area Square (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 considered to be at full size, or only very slow growth 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 height specified.
- **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 tree. Stem divides below 1.5m. Included bark present in fork.	Sever Ivy. Retain. New surfacing within RPA.	B Arb Man	5.94	110.9	0 None	H
T2	T2	Acer pseudoplatanus (Sycamore)	B2	EM	300 (2)	14 (2) (3)	Fair	20+	7	4	5	4	Ivy on tree. Stem divides below 1.5m. Included bark present in fork. Low branches over road/footpath. Branches cut back to boundary. Dead third stem below 1.5m.	Sever Ivy. Remove major deadwood. Crown lift to 3m over footpath. Crown lift to 5m over road. Remove dead stem. Retain. New surfacing within RPA.	B Arb Man	5.09	81.4	0 None	H

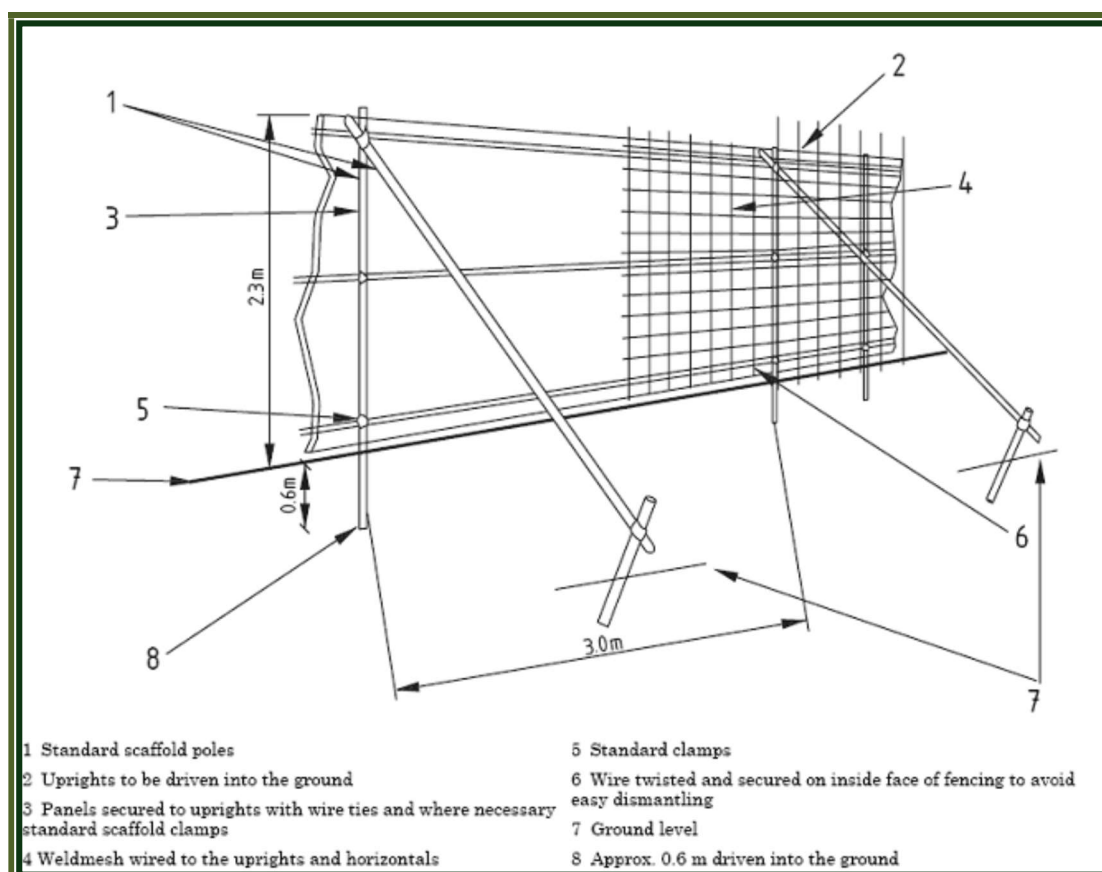
Tag	TPO	Name (Botanical name)	Retention Category	Age Category	Mean Diameter - mm (No of Stems)	Height -m (Lower Crown Height) (Significant Branch)	Condition	Useful Life Expectancy	North	South	East	West	Comments	Recommendations	Works Priority	Root Protection Area - Radius (m)	Root Protection Area - Area (m2)	Likelihood of Protected Species Occupancy	Growth Potential
T3	T3	Acer pseudoplatanus (Sycamore)	B2	EM	300 (2)	14 (2) (1)	Fair	20+	7	4	4	3	Previously crown raised. Ivy on tree. Stem divides below 1.5m. Low branches over road/footpath.	Sever Ivy. Retain. New surfacing within RPA.	B Arb Man	5.09	81.4	0 None	H
T4	T4	Acer pseudoplatanus (Sycamore)	B2	EM	300 (2)	15 (4) (4)	Fair	20+	6	4	3	9	Ivy on tree. Stem divides below 1.5m. Included bark present in fork. Branches restricting highway light.	Sever Ivy. Prune tree clear of road light. Retain. New surfacing within RPA.	B Arb Man	5.09	81.4	0 None	H
T5	T5	Acer pseudoplatanus (Sycamore)	B2	EM	300 (3)	14 (4) (4)	Fair	20+	8	9	7	5	Unable to inspect stem due to Ivy. Stem divides below 1.5m. Included bark present in fork. Deadwood in crown	Sever Ivy. Remove major deadwood. Prune clear of building. Retain. New surfacing within RPA.	A Safety Development	6.24	122.3	0 None	H
T6	T6	Acer pseudoplatanus (Sycamore)	B2	EM	500 (4)	14 (4) (4)	Fair	20+	8	8	7	5	Ivy on tree. Stem divides below 1.5m. Included bark present in fork. Branches cut back to boundary.	Retain. New surfacing within RPA.	A Safety Development	12	452.5	0 None	H
T7	T7	Acer pseudoplatanus (Sycamore)	B2	EM	400 (1)	14 (6) (1)	Fair	20+	3	3	3	3	Ivy on tree. Unable to inspect stem due to Ivy.	Retain RPA fenced off	A Safety Development	4.8	72.39	1 Low	H
T8	T8	Acer pseudoplatanus (Sycamore)	B2	EM	400 (1)	14 (3) (0)	Fair	20+	7	5	7	7	Ivy on tree.	Retain. Access required over RPA.	A Safety Development	4.8	72.39	1 Low	M
T9	T9	Acer pseudoplatanus (Sycamore)	B2	EM	350 (1)	12 (6) (5)	Fair	20+	5	7	6	5	Ivy on tree. Unable to inspect stem due to Ivy.	Retain RPA fenced off	A Safety Development	4.2	55.42	1 Low	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
T10	T11	Acer pseudoplatanus (Sycamore)	B2	M	700 (2)	16 (3) (5)	Fair	20+	6	6	6	6	Ivy on tree. Unable to inspect stem due to Ivy. Stem divides above 1.5m. Included bark present in fork.	Retain RPA fenced off	A Safety Development	11.88	443.4	1 Low	M
T11	No	Acer pseudoplatanus (Sycamore)	B2	M	550 (1)	14 (4) (4)	Fair	20+	8	8	8	8		Retain RPA fenced off	None	6.6	136.9		M
G1	No	Acer pseudoplatanus (Sycamore)	U	SM	300 (7)	10 (2)	Poor	10+	6	6	6	5	Part of linear group. Lapsed pollard. Weak attachment points. Decay present on stem. Included bark present in fork.	Remove tree and root. Remove - In conflict with development.	A Safety Development	9.53	285.4	0 None	H
G2	G1	Prunus avium (Wild Cherry)	B2	EM	350 (2)	15 (1) (1)	Fair	20+	7	5	4	6	Ivy on tree. Unable to inspect stem due to Ivy. Exudation on stem. Stem divides below 1.5m. Included bark present in fork.	Retain. Ground protection and special construction for surfacing within RPA. Prune crowns to give 2m clearance from new building.	A Safety Development	5.94	110.9	0 None	M
G3	No	Sorbus aucuparia (Rowan)	C2	SM	350 (2)	7 (4) (1)	Fair	20+	4	3	5	4	Ivy on tree. Unable to inspect stem due to Ivy. Multiple stems below 1.5m. Included bark present in fork.	Retain RPA fenced off	A Safety Development	5.94	110.9	0 None	M

III. Cascade Chart for Tree Quality Assessment

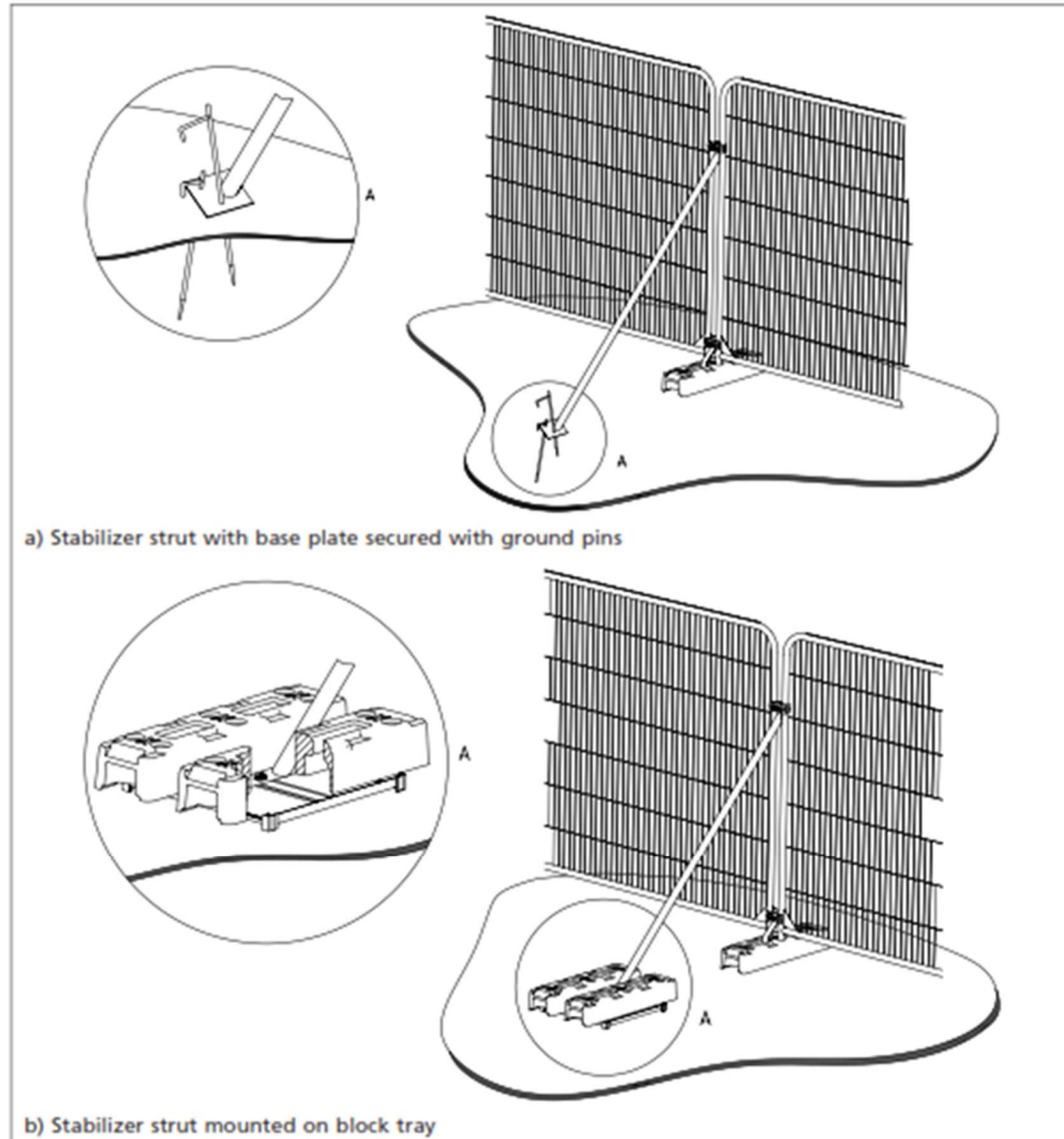
Category and definition	Criteria			Identification on plan
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have a serious, irremediable, structural defect, such that their early loss 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 suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve;</i>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on 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.			

IV. Protective Fencing Details

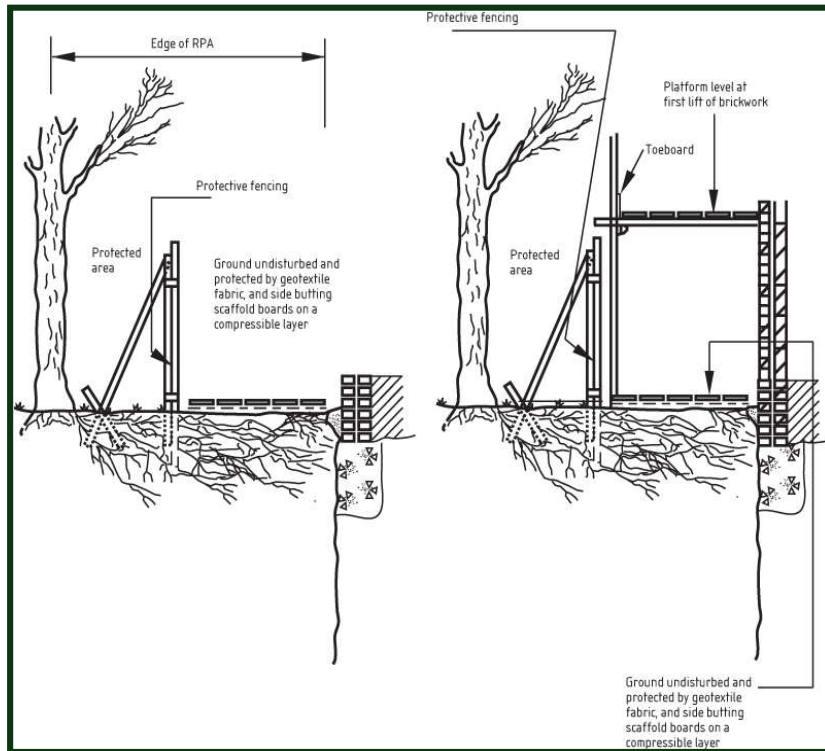


V. Protective Fencing with Above Ground Stabilization

Figure 3 Examples of above-ground stabilizing systems



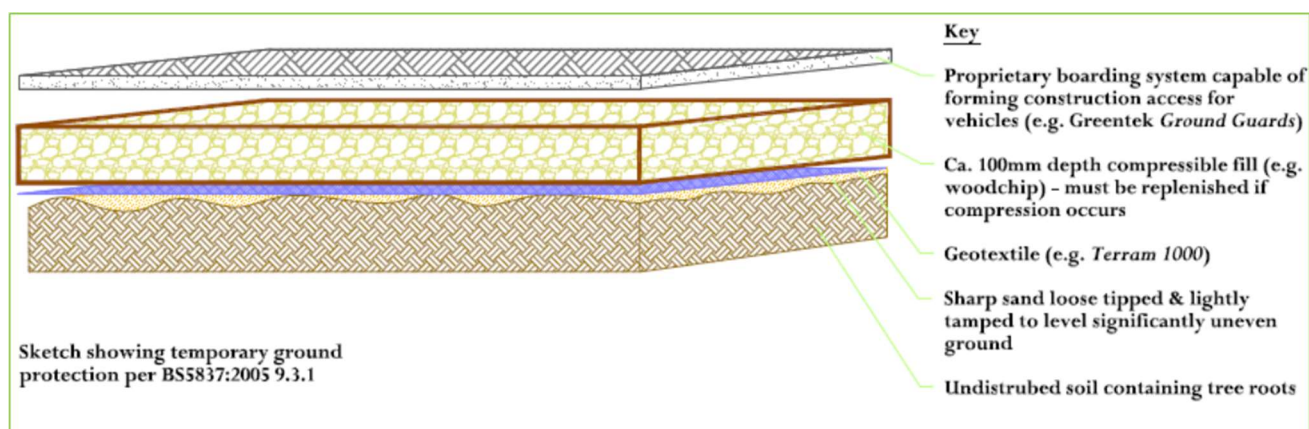
VI. Erection of Scaffolding Within Root Protection Areas



VII. Signs for Placement on Protective Fencing



VIII. Temporary Ground Protection Layers



IX. Scope of Report

This report has been produced to fulfil planning requirements, and to ensure that best practice procedures are enforced prior to construction design, in accordance with BS 5837 (2012) *Trees in relation to construction: - Recommendations*. Tree conditions and amenity values have been assessed with regards to their suitability for retention, during and following the proposed construction, in accordance with the 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 trees ability to cause either direct or indirect damage to buildings, walkways, and other utilities, other than where direct pressure damage is immediately and obviously foreseeable. Trees are dynamic and changing structures and this report comments on tree condition as assessed on the day of surveying.

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 result in significant risk of damage to people or property, be assessed for hazard on an annual basis, 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 flair, 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.