



Arboricultural & Landscape Design Services
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**British Standard [BS 5837: 2012]
Trees in relation to design, demolition and
construction – Recommendations:**

- Arboricultural Method Statement
- Arboricultural Impact Assessment
 - Tree Protection Plan



1 Forest View Bangor Road Marchwiel, LL13 0SE

Prepared for:

Drawing ref no:

DW/DA/HDH/004/BSTS

Planning Application number:

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Control Sheet:

Architect:	www.cbarchitecturaldesign.co.uk
Local Authority:	Wrexham
Prepared by:	Mr. David Winlo
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Arboricultural Impact Summary:

UFG visited the site in June 2023 and surveyed the trees using the BS 5837 2012 guidelines.

There were 2 mature trees surveyed including several sections of hedging/screening. The quality and retention category of the trees surveyed is described in the attached tree survey datasheet.

The condition of the 2 trees was good.

The proposed development conflicts with tree root protection areas (RPAs) of Tree 1, and Tree 2 including the section of boundary hedge in relation to the visibility splay.

Arboricultural Impact Summary:

Based upon the proposed site layout plan and using the UFG 'Impact Guide' including the construction information provided, the impact of the proposed development in relation to trees on and/or influencing the site is considered as **Severe Damage**

In response to this, the tree protective measures are described below and are set out on the attached **BS 5837 Tree Survey** site plan.

Very Low Damage = No intrusion within any of the 'tree root protection areas/s'.

Moderate Damage = Some minor intrusion into some of the 'tree root protection area/s' and with no considered significant damage to tree roots and tree canopies.

Damaging = Intrusion into 'tree root protection area/s' that is estimated to possibly cause tree root cutting to tree roots and with proposed structures conflicting with tree canopies.

Severe Damage = Tree/s and or Hedges require felling or are subject to a significant reduction in height with the proposed development intruding into remaining 'tree root protection area/s' and with proposed structures conflicting with tree canopies.

Very Severe Damage = A substantial amount of tree felling, and tree stump removal is required and/or the proposed developed intruding within any the 'tree root protection area/s' involving likely tree root cutting with proposed structures conflicting with tree canopies and loss of screening and wildlife habitat afforded by trees.



Image 2 –looking Northwest at Tree 1.

It is important to carefully consider that trees both above and below the ground provide irreplaceable occupational and reproduction areas of habitat cover for a myriad of living wildlife.

In addition, trees produce oxygen, absorb carbon dioxide, create organic leaf matter, and provide shade and temperature cooling in a world that is worryingly heating up and is subject to ever-increasing conditions of extreme and catastrophic damaging weather.

The Tree Root Protection Areas [RPAs] as illustrated on the attached BS 5837 Tree Survey site plan the initial calculated circles illustrated in red. They have not been adapted to create an equivalent area that is based on a justification based on specific site conditions.

BS 5837 s5.3 - Proximity of structures to trees

5.3.1 The default position should be that structures are located outside the tree root protection areas (RPAs) of trees to be retained. However, there is an overriding justification for construction within the RPA. technical solutions might be available that prevent damage to the tree(s).

Urban Forestry Group recommends:

- 1. A BS 5837 tree survey is produced that includes the tree root protection areas (RPAs) prior to designing the proposed site layout.*
- 2. The proposed site layout plan is then drawn up to take the RPAs into account and design around the trees.*

3. If the presence and quality of the trees conflict with the proposed site plan layout; then an 'alternative site plan layout' is produced that minimizes the intrusion with RPAs of trees to be retained demonstrated within this document.

4. In response to growing scientific evidence of extreme weather caused by human activity, all proposed development sites must now include a landscape and tree planting management plan.

5. This plan should be to maximize the benefits that soft landscapes and trees bring to creating cleaner greener wildlife environments and combatting extreme weather.

In relation to planting replacement trees, the recommended approach should include:

- New tree planting should also include replacing the function of the trees that have to be felled.
- Selected replacement tree/s should be as close as possible, replicate the canopy tree cover in m² of the trees that have to be felled.

Increasing tree cover in development projects is a priority consideration as part of the scientific Global call to combat conditions of extreme weather and to put nature at the heart of our planning decisions.



Image 2 – looking Southwest at Tree 2.

To help support the above, the reader is directed to read the exceptional work and guidance of David Attenborough in his recent publication: A Life on Our Planet: My Witness Statement and a Vision for the Future. 2020.

In relation to the RPA area of **T-01** the proposed developed is conflicting with this RPA in the following areas:

- **The car turning area and hard standing.**

On the attached tree survey site plan, the car turning area and hard standing are marked up using TERRAM Geocell No Dig matts infilled with chippings. No further specification is provided. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.

- **Grassed area to be laid to turf.**

Rather than disturb and remove topsoil and associated tree roots, carefully prepare the ground to enable grass seeding. Bear in mind that the ground is shaded here and this will limit growth.

With assistance from 3rd party local organizations who work with trees, find new establishment points for the 50+ small sapling oak trees under the tree canopy. This is important to maintain local tree provenance.

- **Utility and Bikes.**

Unknown foundation type and depth overlapping with the RPA of Tree 2.

In relation to the RPA area of **T-02** the proposed developed is conflicting with this RPA as follows:

- **Utility and Bikes.**

Unknown foundation type and depth overlapping with the RPA of Tree 2.

- **Cabin 1.**

Ground bearing slab foundation at **5.3m** distance to the centre of the tree. Unknown foundation depth. This would result in the removal of topsoil and an unknown % of tree roots. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.

As the proposed cabin is underneath the tree canopy, there is foreseeably going to be pressure on the tree for pruning from residents living in the cabin.

- **Patio Area.**

Unknown foundation depth and would result of the removal of topsoil and an unknown % of tree roots. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.

Observations on Hedges:

Although not included in this survey, is the presence of the road boundary hedge is reported to be cut down to 0.9m in height as required by highways or removed. This section of hedge is approx. 28.5m in length and 1m -1.5m in width. Removing this hedge represents a significant loss of tree canopy and wildfire habitat and should be reconsidered in view of the following section **5.3.1**. An alternative solution might include the use of a traffic mirror like those seen in the local area.

There is space within the site to increase the boundary hedges and this should be considered as part of the overall landscaping plan.

5.3 BS 5837 s5.3 - Proximity of structures to trees

5.3.1 The default position should be that structures are located outside the tree root protection areas (RPAs) of trees to be retained. However, there is an overriding justification for construction within the RPA. technical solutions might be available that prevent damage to the tree(s).

5.4 If there is an overriding justification for construction within the RPA, then additional technical specification as outlined in the above section should be provided.

5.4 A draft tree protective fencing plan is included on **BS: 5837 Tree Survey** site plan as attached using the BS 5837 - 2012 Default specification for tree protective barriers. To show the current position of where the tree protective fencing would need to be installed. It is not an approved layout

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s1. The Brief:

1.1 Following on from our phone call 05th May 23 in relation to a **BS 5837 Tree Survey for 2 trees**, Urban Forestry Group [UFG] has been asked by to undertake the following 'BS 5837 Tree Survey / Tree Protection Plan' in relation to the above site address.

1.2 To achieve this UFG will provide BS: 5837 – 2012 services for trees within and affecting the application site, that could influence, or be affected by the development; this includes:

- BS: 5837 - 2012 Tree Survey.
- Tree Constraints Plan.
- Arboricultural Impact Assessment.
- Arboricultural Method Statement.
- Tree Protection Plan.



Image 3 – Vehicle entrance to the site.

2. Site description:

The site represents a two-story semi-detached residential property in a rural location adjoining a main road with gardens to the side and front with an access track and sections of boundary and internal hedging.

s3. Demolition and construction in proximity to existing trees:

3.1 The following points are of importance and guidance:

3.2 The recommended procedure is for the **BS 5837 Tree Survey** to identify the tree constraints and tree root protection Areas [RPA's]. The proposed site layout plan is then drawn up to take these constraints and RPA's into account and if the presence and quality of the trees and their calculated RPA's [As illustrated on the attached **BS 5837 Tree Survey** site plan as red circles around each tree], conflicts the proposed site layout; an 'alternative site layout plan' is produced to technically demonstrate within this document how the tree constraints including any proposed construction within the trees RPA's, has been adequately accommodated in proposed site layout plan.

In addition to this:

3.3 In **BS 5837 2012 s7.1.1** states that; 'Construction within the RPA should accord to the principle that the tree and soil structure take priority, and the most reliable way to ensure this is to preserve the RPA completely undisturbed.'

3.2 In s7.1.2: 'The ability of a tree to tolerate some disturbance and alteration of its growing conditions depends on specific circumstances, including prevailing site conditions, and in general, the older the tree, the less successfully it will adapt to new conditions.'

3.2 In s7.1.3: 'Where alternative design solutions are not available, such that construction is proposed within the RPA, the potential impact of the proposals on the tree should be assessed and a tree protection plan [TPP] and arboricultural method statement [AMS] produced.'

3.3 This arboricultural assessment, is based on the 'site layout design', including the site-specific construction information provided in the 'project development questionnaire', as set out in the following section:

s4. Project Development Questionnaire:

4.1 This document is cross-referenced to the attached **BS 5837 Tree Survey** site plan and using the information set out in **BS 5837 – 2012**; the following questions 4 – 29 have been requested to be answered by the Client and/or their agent, by use of a 'project development questionnaire', that can be viewed online at:

<https://urbanforestry.co.uk/project-development-questionnaire-form.html>

4.2 The answers provide site-specific information; have been copied into the relevant section as below and will be used in the impact assessment of the proposed development in relation to the trees to determine which trees are proposed to be removed, retained, pruned, including the level of tree protection and tree protective fencing.

4.3 It is important that the information provided is sufficiently detailed, as UFG relies on this information to form its arboricultural assessment and consequential tree protection plans as here set out.

4.4 Where for whatever reason, no information has been provided to the questions in the online 'project development questionnaire', the relevant section/s will be marked as: # no answer provided.

4.5 Any relevant notes and / or comments input by UFG will be put in brackets ().

Start: [Email Answers Received on Date: Mon 26/06/2023 11:14 and completed by the Client].

Q1. Are there any Tree Preservation Order's [TPO] applicable for the tree works to the site:

No.

Q2. Are there any Conservation Area Details applicable to the site:

No.

Q3. Description of the proposed development:

two holiday cabins.

Q4. Trees / Hedges to be removed:

Hedge reduced. (Understood to refer to the boundary section of hedge adjoining the road).

It is understood there is an approximate 3m length of hedge being removed from an internal section of hedge to enable vehicle access as illustrated on the attached BS 5837 Tree Survey Site Plan – Proposed Site Plan Layout.

Q5. Details of the proposed site construction access and the proposed construction access routes within the site:

Existing access.

Q6. Contractor's car parking:

Onsite.

Q7. Phasing of construction works in relation to tree protection:

Unknown.

Q8. Use of any heavy plant:

Heavy Plant [Please circle]: YES / NO

If YES please give details:

Mini digger.

[Use of typical mechanical JCB or mini digger to form foundation channels and/or groundworks within and around the building area].

Q9. The availability of special construction techniques in relation to trees:

N/A.

Q10. Any construction proposals for bridging tree roots, or inserting tree root barriers:

Urban Forestry Group to advise.

Q11. The location and space including any proposed trenching for all:

A. Service runs	G. Water
B. Foul and surface water drains	H. Electricity
C. Land drains	I. Telephone
D. Soakaways	J. Television
E. Gas	K. Communications cables
F. Oil	L. Other

Please supply any detailed information for the above selections:

Unknown at this stage.

Q12. Please describe the proposed development foundation type/s and depth/s, including any driveways, kerbs and other proposed structures:

Ground bearing slab.

Q13. All changes in ground level, including the location of retaining walls, and steps, and making adequate allowance for foundations of such walls and backfilling's:

None.

Q14. Space for cranes, plant, scaffolding, and access during works:

Unknown.

14.1 [Contractors operating cranes, plant or scaffolding are here recommended in advance of any works to follow the BS section '7.3 Tree protection during demolition' and to also ensure crane jibs are not going over or under the tree protective fencing areas that could in any way damage trees].

14.2 [The appointed Contractor is to provide a plan for the location of space for cranes, plant, scaffolding and access during works, ensuring that they are in positions that do not conflict with the location of existing trees to be protected during the works. This information is to be issued to both the architect and the local authority for approval prior to any works commencing].

Q15. Space for site huts, temporary latrines [including their drainage] and other temporary structures:

Unknown.

Q16. The type and extent of post landscaping works, which will be within 'tree root protection protected' areas:

Grassed as site plan.

Q17. Safe storage of materials:

Unknown.

[The appointed Contractor is to provide a plan for the location of material storage, ensuring that they are in positions that do not conflict with the location of existing trees that are to be protected during the works, this includes where applicable; any harmful liquids will be stored in a lockup and cement mixers are to be washed out into containers and cleaned out outside the tree root protection areas This information is to be issued to and agreed by the local authority prior to any works commencing].

Q18. If there is a slope/s on site; how are any materials or harmful liquids to be stored so that they don't seep into the ground and damage trees and tree root systems? This includes washing out cement mixers and construction equipment:

No Slopes.

Q19. Details of any new tree planting to provide mitigation for removal of any tree/s:

N.A.

Q20. Please provide details of any demolition procedure, including lifting driveways and removal of materials / spoil off site, location of skips:

N/A.

Q21. Are there any visibility splay conflicts with the tree root protection areas of trees:

No.

(There however reported visibility splay conflicts with the section of boundary hedge trees, that is understood to have been requested by Highways to be either removed or reduced in height to 0.9m height).

Q22. Please provided information as to the removal and replacement of any boundary fencing and / or walls:

Unknown.

Q23. Any other 'known possible potentially damaging activities' in relation to the 'tree root protection area/s' either above, or below ground:

No.

Q24. If following completion of this questionnaire you have any 'additional and supporting drawings and / or specific site information', please attach it here. Any files larger than 2.5 MB - please email them to urban forestry group, including a summary along with any points you would like to make:

No further information received.

[End of the 'Project Development Questionnaire'.](#)

s5. Above and below constraints posed by existing trees:

5.1 The Tree root protection areas (RPA's) as illustrated on the attached **BS 5837 Tree Survey** site plan illustrate the 'below ground' constraints:

5.2 Based on the above information, the following issues relating to the protection of trees to be retained have been identified:

In relation to the RPA area of **T-01** the proposed developed is conflicting with this RPA in the following areas:

- **The car turning area and hard standing.**

On the attached tree survey site plan, the car turning area and hard standing are marked up using TERRAM Geocell No Dig mats infilled with chippings. No further specification is provided. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.



Image 4 – View of Tree 1 (Right) and Tree 2 (Left).

- **Grassed area to be laid to turf.**

Rather than disturb and remove topsoil and associated tree roots, carefully prepare the ground to enable grass seeding. Bear in mind that the ground is shaded here and this will limit grass growth.

With assistance from 3rd party local organizations who work with trees, find new establishment points for the 50+ small sapling oak trees under the tree canopy. This is important to maintain local tree provenance.

- **Utility and Bikes.**

Unknown foundation type and depth overlapping with the RPA of Tree 2.

In relation to the RPA area of T-02 the proposed developed is conflicting with this RPA as follows:

- **Utility and Bikes.**

Unknown foundation type and depth overlapping with the RPA of Tree 2.

- **Cabin 1.**

Ground bearing slab foundation at 5.3m distance to the centre of the tree. Unknown foundation depth. This would result in the removal of topsoil and an unknown % of tree roots. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.

As the proposed cabin is underneath the tree canopy, there is foreseeably going to be pressure on the tree for pruning from residents living in the cabin.

- **Patio Area.**

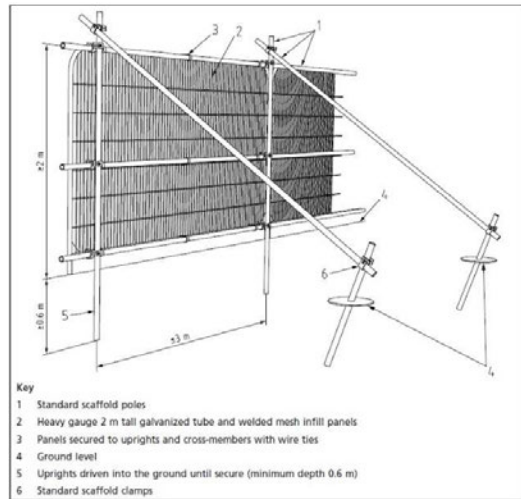
Unknown foundation depth and would result of the removal of topsoil and an unknown % of tree roots. It is recommended to keep the mini digger out of the root protection area and excavate using hand tools, with any tree roots cut cleanly using hand tools.

Observations on Hedges:

Although not included in this survey, the presence of the road boundary hedge is reported to be cut down to 0.9m in height as required by highways or removed. This section of hedge is approx. 28.5m in length and 1m -1.5m in width. Removing this hedge represents a significant loss of tree canopy and wildfire habitat and should be reconsidered in view of the following section 5.3.1. An alternative solution might include the use of a traffic mirror like those seen in the local area.

There is space within the site to increase the boundary hedges and this should be considered as part of the overall landscaping plan.

5.3 BS 5837 s5.3 - Proximity of structures to trees



5.3.1 The default position should be that structures are located outside the tree root protection areas (RPAs) of trees to be retained. However, there is an overriding justification for construction within the RPA. Technical solutions might be available that prevent damage to the tree(s).

5.4 If there is an overriding justification for construction within the RPA, then additional technical specifications as outlined in the above section should be provided.

5.4 A draft tree protective fencing plan is included on **BS: 5837 Tree Survey** site plan as attached using the BS 5837 - 2012 Default specification for tree protective barriers. This shows the position where the tree protective fencing would need to be installed to facilitate the proposed development and groundwork.

5.11 These tree protection plans should be incorporated into relevant subsequent plans and construction drawings issued for use on-site, to ensure that all interested parties are fully aware of the areas in which construction access and works may and may not take place.

Image 5 - BS 5837 - 2012 Figure 2 - Default specification for tree protective barrier.

5.12 The information supplied in the project development questionnaire is limited and it is unknown as to the type and depth of foundations and what extent this has on the trees.

5.13 Where underground services require trenching works, they should be situated outside the Tree Root Protection Areas. If for whatever reason this is not possible, then any associated trenching works that are required should follow **BS 5837 section 7.7 Underground and above-ground utility apparatus**.

s6. Specifications for tree root pruning:

6.1 In **BS 5837 s7.1.3** it states: Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.

s7. Post construction Landscape near trees:

Please refer to the attached site plan proposal.

s8. General considerations for demolition and construction activities in proximity to existing trees:

8.1 It is important to consider the underground respiration requirements of trees ideally the ground around trees needs to be porous and allow gaseous exchange from the soil environment to maintain a soil environment where tree roots can undertake their functions.

8.2 No fires are to be lit on site, as the heat produced can seriously damage soil / tree roots and the canopies of trees that will become scorched and dieback.

8.3 To avoid damage to tree roots, existing ground levels should be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained in situ.



Image 6 - An example of an exposed mature tree root system.

8.4 Prior to any backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

8.5 Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that might be present beneath it. Hand-held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface, working backwards over the area, so that the machine is not moving over the exposed ground.

8.6 Where permanent hard surfacing within the RPA is considered unavoidable, site-specific and specialist arboricultural and construction design advice should be sought to determine whether it is achievable without significant adverse impact on trees to be retained. This may involve the digging of test pits or trenches to determine any tree root activity as part of the assessment.

8.7 Raising levels should be achieved by use of a granular material which remains gas- and water-permeable throughout its design life.

8.8 The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would minimize adverse impact on trees should include attention to existing levels, proposed finished levels and cross-sectional details. To arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer.

8.9 Wherever possible, service / utility apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.

8.10 Consideration could be given to the reuse or sale of timber from felled trees, including using the composted chippings as mulch.

8.11 Once a layout for the development area has been finalized and approved by the local planning authority, an arboriculturist should review the relationship of the development to the trees and should prepare a schedule of tree works listing all the trees that require work (by number), accompanied by a cost of the tree work to assist project budgeting including the requirement of any road permits to undertake tree surgery work over carriageways.

s9. Wildlife considerations in relation to trees:

9.1 Urban Forestry Group shares the view that it is important not to think of trees as flat circular elements marked up on a site plan that are simply in the way and conflicting with the proposed development, causing a nuisance or restricting development and therefore, must be destroyed with some small replacement tree/s planted in elsewhere on the site as mitigation. The answer to this will always be No.

9.2 As good practice, it is recommended to undertake the tree survey first and design around the tree root protection areas with the design always inclusive of soft landscaping design that includes soil improvement, trees and proposed vegetation carefully chosen for the improvement of wildlife in a connected way with the site surroundings.

9.3 The recommended way of approaching trees and associated wildlife is as a minimum requirement to undertake the tree survey at the beginning of the project as a design aid, which illustrates the available space and to build around and outside tree protection areas, so that the project development includes a net gain in wildlife protection and habitat opportunities.

9.4 It is more appropriate to look at trees as livings growing competitive systems and forms part of complex ecological relationships above and below the ground with a myriad of living creatures of all shapes and sizes that form in interrelated parts, based on an 8-living biological Kingdoms model.

9.5 Within these 8-living biological Kingdoms it is that the trees that play a major part in providing the goods and services for all the other associated biological Kingdoms and if trees are to be removed, then they need to be replaced based on the principle of function, thereby replacing the goods and services that tree/s provide, taking into account the species function and the volume of the tree and size of its canopy.

9.6 Any site clearance of trees including the pruning of trees should be undertaken outside the bird nesting season: Jan – Aug and should consider the recommendations of any ecological surveys and account in writing as to principal of trees and wildlife to achieve net gain.

9.7 Understanding and taking written stock of what living creatures and processes are in place in relation to the 8-living biological Kingdoms, helps make the best development decisions, to protect and enhance the site in terms of net gain in its internal and surrounding wildlife needs.

s10. An indication of potential direct obstruction of sunlight:

It is estimated that during the summer months, there would be some loss of sunlight during the afternoon and early evening.

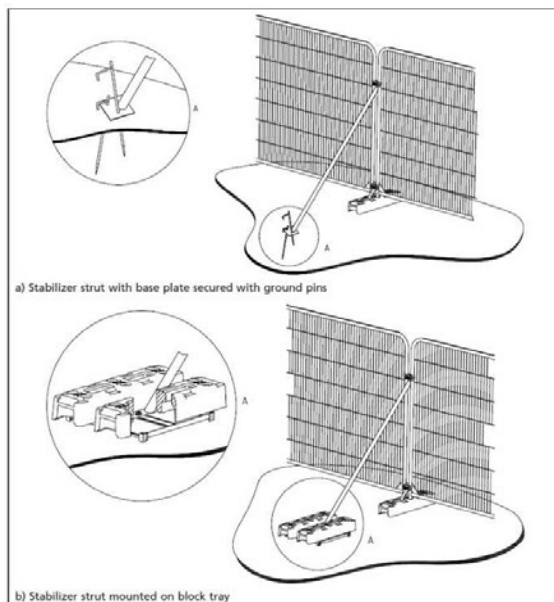
s11. Tree Protective Fencing Specification:

11.1 All trees that are being retained on site should be protected by barriers before any materials or machinery is brought onto the site and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone.

11.2 The protected area should be regarded as sacrosanct, and once installed, barriers and ground protection should not be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the local planning authority.

11.3 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the local planning authority if appropriate.

11.4 If required the project arboriculturist can confirm that the have been correctly set out on site, prior to the commencement of any other operations.



11.5 Care should be exercised when locating the vertical poles to avoid underground services.

11.4 If required the project arboriculturist can confirm that the have been correctly set out on site, prior to the commencement of any other operations.

11.5 Care should be exercised when locating the vertical poles to avoid underground services.

11.6 The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

11.7 Due to human construction traffic moving around the development site; the use of 20mm exterior plywood boards are recommended to be used as secured ground protection between the tree root protection fencing and extremities of the tree root protection areas, to minimise any possible compaction to the soil/tree root environment. This is marked on the tree survey site plan as 'Ground Protection'.

Image 7 - BS 5837 2012 Figure 3 Examples of above-ground stabilizing systems.

s12. Arboricultural site monitoring:

12.1 At present no 'arboricultural site monitoring' has been requested to be included in this BS 5837 assessment and tree protection process.

12.2 BS 5837: 2012 s6.3 states:

'Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.

NOTE Existing planning regulations include the provision for local authorities to enforce planning requirements. The project arboriculturist appointed by the developer can help monitor site activity, but enforcement is the responsibility of the local authority.

12.3 A calendared program of 'arboricultural site monitoring' should check that the approved tree protection measurements including any recommended ground cover are correctly implemented and signed off as completed and satisfactory at the appropriate stages of development.

12.4 A PDF copy of this programme of 'arboricultural site monitoring' can be supplied to all parties during the inspection process; so that any special arboricultural protection considerations are identified and observed by building contractors, including any other relevant parties during the approved works so that the trees are adequately protected.

12.5 Existing planning regulations include the provision for local authorities to enforce planning requirements. The project arboriculturist appointed by the developer can help monitor site activity, but enforcement is the responsibility of the local authority.

12.6 If instructed to do; UFG can provide a quotation for a spreadsheet-based auditable system of 'arboricultural site monitoring and post-development tree management' Please contact the office for further details.

s13. Contingency Plans:

If prior to and/or during the works any questions arise concerning trees and tree protection; please either contact the local planning authority tree officer, quoting the planning reference number or the Urban Forestry Group.

s14. Our Environment:

14.1 Based on both existing and current scientific survey reports in relation to climate change resilience and good building design; Urban Forestry Group adopts the view that rather than being just a tick on the 'development checklist', the retention of trees, the surrounding plants, investment in soft landscapes, new tree planting and the management of all trees is in relation to the extremes of weather associated with climate change a '**must do now**' objective and this climate change the extremes of weather and the effects this has is in motion and is our responsibility.

14.2 This responsibility requires an understanding and a commitment to putting into working practice a 'tree care' plan focused on retaining and carefully building around healthy trees, removing the dead, dying and dangerous trees and replanting with new trees, managed to maturity so that with all developments in terms of tree cover there is a net gain with habitats created to ensure the wildlife associated with trees, shrub cover, soil and watercourses in improved and connected and managed over both the short and the long term.

14.3 Tree care will require investment, maintenance and a 'radical gear shift in thinking', simply because; as climate change and variations from previous patterns of weather becomes more prevalent, more destructive and where this destruction of the natural world will facilitate the likely increase in further pandemics, it is critical for all of us to face up to, understand and implement creative methods for managing wooded landscapes where the climatic benefits of trees and plants positively influence the environment around us.

14.4 The coronavirus pandemic is likely to be followed by even more deadly and destructive disease outbreaks unless their root cause – the rampant destruction of the natural world – is rapidly halted, the world's leading biodiversity experts have warned.

14.5 "There is a single species responsible for the Covid-19 pandemic – us," they said. "Recent pandemics are a direct consequence of human activity, particularly our global financial and economic systems that prize economic growth at any cost. We have a small window of opportunity, in overcoming the challenges of the current crisis, to avoid sowing the seeds of future ones."

14.6 We can emerge from the current crisis stronger and more resilient than ever, [by] choosing actions that protect nature and the trees that form an essential structural aspect of nature that we are all a part of, so that trees and nature can help to protect us."

s15. References:

1. Image 6 - <http://gibneyce.com/index.html>

2. The biological classification system of life introduced by British zoologist Thomas Cavalier-Smith - https://en.wikipedia.org/wiki/Cavalier-Smith%27s_system_of_classification

To learn more please refer to:

A Higher-Level Classification of All Living Organisms

Michael A. Ruggiero, Dennis P. Gordon, Thomas M. Orrell, Nicolas Bailly, Thierry Bourgoin, Richard C. Brusca, Thomas Cavalier-Smith, Michael D. Guiry, Paul M. Kirk

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Customer / Contractor Notes: