

Arboricultural Method Statement for excavations near G008
in accordance with
BS 5837:2012 (Item 6.1)

At
Vantage, CW12, Plot 7

Dated: February 2025

ON THE INSTRUCTIONS OF
Soltys Brewster

Reported by Mr. S J Ambler Cert.Arb.(RFS), Tec.Arbor.A., Dip.Arb.(RFS), F.ARBOR.A.

Of

Steve Ambler & Sons Tree Specialists Ltd

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

Signed - Steve Ambler	
Date	February 2025

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1.0 INTRODUCTION, SCOPE AND BACKGROUND

Steve Ambler and Sons Tree Specialists Ltd are instructed by Soltys Brewster to undertake an Arboricultural Method Statement (AMS) for earthworks to reprofiling an embankment close to Group 008, on land at the Vantage Data Centre, Cardiff (CWL1). The group comprises of six mature Goat Willow (*Salix caprea*) with a retention category of C.

The site is adjacent to the A48 dual carriageway to the north, and to housing on Pencarn Avenue to the north-east.

The Ordnance Survey national grid reference is ST 28254 84763.

This AMS is a requirement imposed by the Local Planning Authority (LPA). Its purpose is aimed at protecting trees of importance on this site from construction damage, which is prepared along the guidelines set out in the relevant British Standard¹. It looks at the potential risk of injury to trees from this construction activity and advises on techniques and physical barriers to protect them, and their immediate environment.

This assessment takes account of the current layout in the drawing provided –

- CWL12-SOLB-ZZ-SI-DR-L-900102 -S5_C03 entitled - Area 7 Tree and Vegetation Protection and Removal Plan created by SoltysBrewster

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

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

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

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

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

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

¹ British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction - Recommendations

NOTES.

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

2.0 TREE PROTECTION PLAN

The below ground constraints of any retained tree are equal to its required Root Protection Area (RPA) and this distance for each tree or group is provided within the Report and Tree Constraints Plan² provided by Atkins (as amended and located at the rear of this Report).

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

- φ The Root Protection Area (RPA) shown as a solid orange line. The radial distance provided is taken from the centre of the tree's main tree.
- φ The correct positioning for installing suitably robust barrier fencing.
- φ A suitable and robust barrier fencing detail as recommended in the British Standard¹.

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

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

Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, the RPA will be drawn as a polygon. Such modifications to the shape of the RPA will reflect a soundly based arboricultural assessment of likely root distribution. Proposed new planting is also marked on the plan as a 'constraint', and soil should be protected from compaction where this is to occur with the use of barrier fencing.

3.0 ARBORICULTURAL METHOD STATEMENT - SITE SPECIFIC MATTERS

The British Standard promotes the arboricultural method statement should be appropriate to the proposals and might typically address some or all the following mentioned below, however this list is by no means exhaustive and additional comments are found.

- a. Tree Felling
- b. Specification for the barrier fencing to enclose the RPA of retained trees.
- c. Location of the barrier fencing to enclose the RPA.
- d. Installation of temporary ground protection.

² VDC Plot 7 Tree Protection Plan P02 17.10.23 Atkins

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

4.0 TREE FELLING, SURGERY AND SITE CLERANCE

- Already completed

5.0 BARRIER FENCING

Whilst the RPAs of both south westerly trees within Group 8 are to be adjusted, they must be protected using robust physical barriers (as shown in the Tree Protection Plan in the Appendix (Ambler) which indicates the correct type of fencing and the location for the positioning of the Tree Protection Barriers. This must be erected before any materials or machinery are brought onto site, demolition, stripping of soil or development of any kind commences, apart from approved³ tree works mentioned above.

Tree Protective Barrier Fencing Method Statement

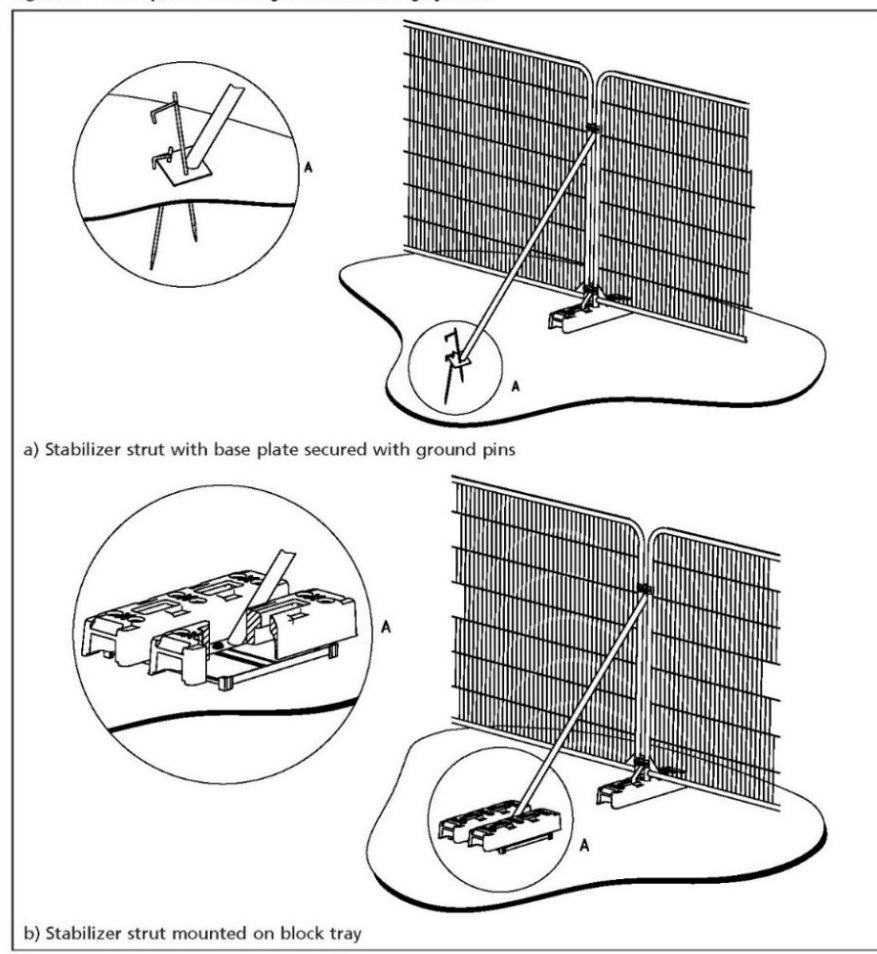
1. The developer must ensure all Tree Protective Barrier Fencing is installed prior to any occupation of the site and prior to plant, machinery, equipment, site offices or materials etc are located.
2. Engage a Project Arborist for the duration of works to monitor and advise as necessary under a Watching Brief Scheme.
3. Where required, pre-development approved tree work may be undertaken prior to the installation of tree protection measures which must be under the guidance of the PA and with the agreement of the Local Planning Authority. However, no vehicles will be permitted within any unprotected RPA of retained trees and works must be carried out with due consideration and without causing injury to any retained tree. Trees permitted for felling will only be those approved on the Tree Felling Plan and identified on site clearly by the PA.
4. All approved tree felling, and surgery works must be undertaken under the supervision of the PA.
5. The PA must mark out the RPA for each tree or group on site using road pins or flu marker paint.
6. Once the Protective Barrier Fencing is in place it must protect the Root Protection Area or crown spread whichever the greater and be approved and signed off by the PA prior to any demolition, movement of plant and equipment or any site occupancy.
7. The PA will assess if any trimming or tying back of branches is required to prevent contact injury from plant. The PA will seek approval from the LPA of any Works Schedule created, identifying all necessary works.
8. Barriers should be monitored and maintained throughout the construction phase to ensure they remain rigid, complete, and fit for purpose.
9. Any works occurring within any RPA **must** be covered by an 'Approved' Arboricultural Method Statement and may only proceed under the supervision of the Project Arborist.

³ Approved by the Local Planning Authority

10. This protective barrier may only be repositioned or moved where covered by an Approved Method Statement and under the supervision of the PA.
11. It should be confirmed by the PA that the barriers and any necessary ground protection are installed correctly prior to the commencement of any other operation and the LPA informed who may wish to attend site and view it first-hand. A method statement is provided for installing Ground Protection which must be followed.
12. Prior to any construction activity and where due to site constraints construction activity cannot be fully or permanently excluded from all or part of a tree's RPA, appropriate ground, tree stem, and low crown protection must be installed (see section 6.2.3 – BS 5837), under the guidance of the Project Arborist.
13. The provision of a 2-metre-tall, welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels must be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 metre and should be uniform throughout the fence. The panels MUST be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g., due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

Figure 3 – Alternative Protective Fencing

Figure 3 Examples of above-ground stabilizing systems



NOTES

1. All-weather notices (Example below) must be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE - NO ACCESS". Refer to example notice below.

Example of Warning Sign



6.0 REMOVAL OF EXISTING STRUCTURES AND HARD SURFACES

- No demolition of hard structures or buildings are proposed.

7.0 INSTALLATION OF TEMPORARY GROUND PROTECTION

- It would appear from viewing the proposed plans that there is sufficient room to execute the construction using plant situated outside the RPA without the need for entering the RPAS of retained trees and therefore the need for Ground Protection seems highly unlikely. However, information is provided here that must be adhered to if ground protection becomes necessary.

In all cases, the objective should be to avoid compaction of the soil and crushing injuries to the roots which can arise from even a single passage of a heavy vehicle, especially in wet conditions.

Method Statement Ground Protection

1. In all cases, the objective should be to avoid compaction of the soil and crushing injuries to the roots which can arise from even a single passage of a heavy vehicle, plant or equipment, especially in wet conditions.
2. Temporary ground protection must be installed over the exposed Root Protection Area (Root Protection Area), to act as a load spreader to avoid soil compaction and compressive root injury and must be suitable for the weights intended.
3. A product such as Trackmats or a similar product should be used which must be agreed with the Project Arborist. The ground protection might comprise one of the following: -
4. For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geotextile membrane.

5. For pedestrian-operated plant up to a gross weight of 2-ton gross weight, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150 mm depth of woodchip), laid onto a geotextile membrane.
6. For wheeled or tracked construction traffic exceeding 2-ton gross weight, an alternative system (e.g., proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with an engineer and Arboriculturist, to accommodate the likely loading to which it will be subjected.
7. Barrier fencing should be installed in accordance with the Tree Protection Plan (Appendix D).
8. Where construction works or temporary access is justified within the RPA and is highlighted within an approved AMS, this should be facilitated by a set-back in the alignment of the barrier fencing.
9. Such a setback in the alignment of fencing must only occur immediately prior to the works commencing and which must be installed at the first opportunity immediately following completion of the works under the guidance of the PA.
10. Temporary ground protection is to act as a load spreader to avoid soil compaction and compressive root injury it and must be suitable for the weights intended.
11. Laying the ground protection material over the exposed RPA should be carried out immediately after the set back in the barrier fencing is completed and prior to the onset of any works and preferably during dry weather.
12. Laying the ground protection layers should be done in a forward working fashion to avoid compaction so any vehicle involved in the process will always be situated on top of the ground protection.
13. Take care not to damage any part of the tree stem or branches. Tie back branches or prune in accordance with an approved ³ tree surgery schedule.
14. Removal of the ground protection at the end of the construction phase should also be done in a reverse working fashion.
15. Re erect the Tree Protective Barrier Fencing immediately

7.1 INSTALLATION OF SERVICES AND SPECIALISED TRENCHLESS TECHNIQUES

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

GAS

- No service drawings were provided. These should be made available for review by the PA. any proposed services should avoid the RPAS of retained trees.

ELECTRICITY

- No service drawings were provided. These should be made available for review by the PA. Any proposed services should avoid the RPAS of retained trees.

WATER MAINS

- No service drawings were provided. These should be made available for review by the PA. any proposed services should avoid the RPAS of retained trees.

DRAINAGE

- Drainage is covered in drawing DRAINAGE PRELIMINARY GENERAL ARRANGEMENT SEWER ·VDC Plot 7 Drainage Plan 5222744-ATK-XX-XX-DR-A-900150. It shows an attenuation basin. The position as shown on the General Landscape Arrangement Drawing indicates it interferes with the RPA of two retained trees within G008.

CCTV

- No CCTV is proposed

8.0 EXCAVATIONS

- Excavations are proposed as shown on drawing number - CWL12-SOLB-ZZ-SI-DR-L-900102 C03 which compromise the RPA of G008 as shown in the extract below in Fig 1 and Fig 2. The grey shaded area indicates the proposed contour lines and the footprint of the excavations, to form the batter. It marginally clips the RPA of two trees identified using green circle overlays -

Figure 1

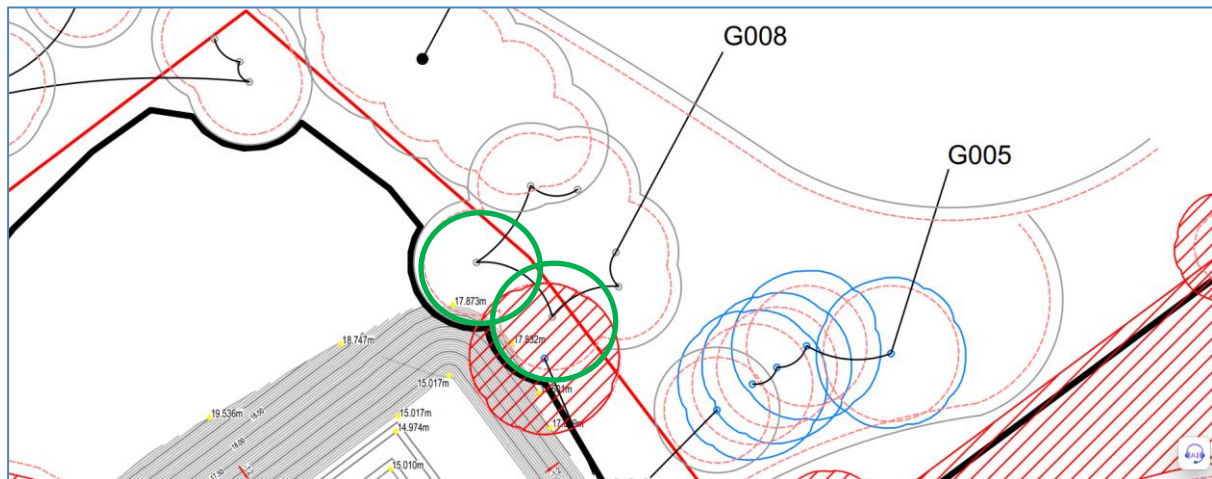
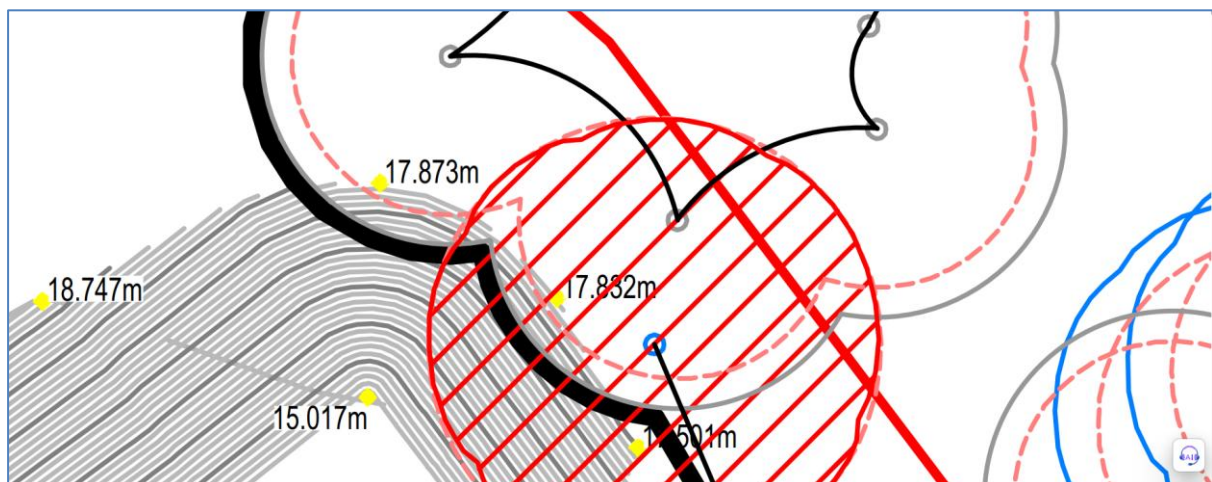


Figure 2



The cut into the RPA of these trees is very small and amounts to less than 5% of the overall RPA. Such a small intrusion is unlikely to have a negative effect, and, in this instance, it is possible to award a corresponding amount of RPA to the north as compensation. This is acceptable as advocated within the current British Standard 5837 Recommendations 2012 - Trees in Relation to Design, Demolition and Construction.

The following arboricultural method statement must be followed -

ARBORICULTURAL METHOD STATEMENT FOR ENTERING AN RPA

1. Watching Briefs must be scheduled to cover this work.
2. All works within the RPA must be agreed by the LPA and under the full supervision of the Project Arborist (PA).
3. PA must attend a site meeting with the Site Manager or other representative to assess what amount of the RPA is to be exposed prior to the works. This should be marked out clearly using flu marker paint or similar.
4. Tree Protective Barrier Fencing to be offset to expose only the area of RPA required and on the day the works are to commence. The remainder of the RPA is to remain fully protected with a setback in the alignment of the protective fencing.
5. The offset Tree Barrier Fencing must remain in place for the full duration of the works and be inspected regularly by the PA.
6. If access is required into the exposed RPA beyond the agreed excavations, then it must be protected using load spreaders' which are suitable to support the full load of the plant and equipment used. The Developer must provide evidence to the PA of the load spreaders being used and supply the technical information in respect of loads it will support for approval.
7. All operations must be performed to the satisfaction of the PA without causing any soil compaction and with full protection of the underlying roots from compressive injury, this protection should include tracking inwards and outwards from the RPA and working within it.
8. Consider the choice of plant and equipment, its working height and clearance with overhanging branches, to avoid damaging tree branches. This must be discussed and agreed with the PA prior to commencement.
9. Any necessary facilitation pruning should be assessed first and scheduled where necessary by the PA and approved by the LPA prior to works commencing. Such works must be under the supervision of the PA and to their full satisfaction.
10. PA to assess the height of the lowest branches above ground level and where they do impinge on the proposed operations that an arboriculturally sound solution is available e.g., light pruning or tying back of branches.
11. Any contactors required to perform tree surgery operations must nominated and approved first by the LPA.
12. Stage by stage photograph evidence must be collated throughout the duration of the works and included within the watching Brief Report/s to the LPA.
13. Any tree works shall be in accordance with the British Standard Recommendations for Tree Works BS 3998: 2010 and industry best practice.
14. Care must be taken to protect the stem of the tree/s. if required by the PA, tree stems must be protected using as shown in the figure below.
15. Take precautions to prevent soil contamination, which may involve using a non-permeable sheet below the ground protection during its operation to prevent leaking fuel and hydraulic oil entering the soil.
16. The excavation works must be carried out with the excavator standing outside the RPA whilst using a grading bucket (not a toothed bucket) to allow a cleaner cut of any roots encountered. The bucket movement should be one using a downward pressure rather than pulling which is likely to damage roots beyond the line of cut.
17. Any roots that are exposed in the cut surface must be pruned back with a clean cut to promote wound occlusion.
18. Spill kits should be carried and in the event of any contamination, it shall be collected immediately and disposed of in a proper manner and the Arboriculturalist and Site Manager informed.
19. Upon completion of these works, the Tree Barrier Fencing must be reinstated to its original position, assessed and signed off by the PA.

9.0 INSTALLATION OF NEW HARD SURFACING - MATERIALS, DESIGN CONSTRAINTS & IMPLICATIONS FOR LEVELS

- No hard surfaces are proposed within the RPA of G008.

10.0 SPECIALIST FOUNDATIONS - INSTALLATION TECHNIQUES AND EFFECT ON FINISHED FLOOR LEVELS AND OVERALL HEIGHT

- No special engineering for foundations within the RPA of G008

11.0 RETAINING STRUCTURES TO FACILITATE CHANGES IN GROUND LEVELS

- No retaining structures effect the trees within G008.

11.0 BOUNDARY TREATMENTS

- No proposed boundary treatments within the RPA of G008

12.0 PREPARATORY WORKS FOR NEW LANDSCAPING

- This matter is covered within the exsistng AMS for this site.

Soil Compaction and Remediation Measures

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

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

13.0 GENERAL MATTERS

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

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

Planning of site operations should take sufficient account of wide loads, tall loads and plant with booms, jibs, and counterweights (including drilling rigs), in order that they can operate without encountering the RPA, trunks stems or branches of any retained trees. Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any movement of plant or machinery in proximity to trees should be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is always maintained. Access facilitation pruning should be undertaken where necessary to maintain this clearance if in accordance with good arboricultural practice (see note 2 below).

NOTES

1. Local planning authority consent for pruning will be required.
2. Fires on sites must be avoided.
3. Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

14.0 AUDITABLE SYSTEM OF ARBORICULTURAL SITE MONITORING, INCLUDING A SCHEDULE OF SPECIFIC SITE EVENTS REQUIRING INPUT OR SUPERVISION.

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

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

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

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

14.1 SCHEDULE OF WATCHING BRIEF VISITS

1. The Project Arborist should attend site and mark out the Tree Protective Barrier Fencing.
2. The Project Arborist should attend site and assess, once complete, the Tree Protective Barrier Fencing is fit for purpose and sign-off with the LPA.
3. The PA must supervise all works that occur within any RPA.
4. The suitability of the Tree Protective Barrier Fencing will be assessed at each visit.
5. Additional visits should occur at scheduled specific events as mentioned in Item 15.0 below.
6. Watching Brief Reports will be submitted to the LPA at the end of each month.
7. The Report will include details of the visit, list concerns, recommended remedial action, sign off remedial action where complete and will include photographs.
8. The Watching Brief Report will relay, communicate, and update the LPA of the standard and success of arboricultural care on site.

15.0 SITE SPECIFIC ARBORICUTURAL EVENTS

1. The marking out of the RPAs by the PA
2. Erection of Tree Protective Barrier Fencing, PA to check for conformity and sign off with the LPA.
3. The positioning, installation, and suitability of ground protection where necessary
4. Tree Pruning/felling assessment and schedule of works
5. Works within the RPA of G008 to form batters through excavations
6. Removal of ground protection
7. Reinstatement of tree protective fencing.

COMMUNICATIONS LIST

Mr. Vaughan Lewis (Lead Project Arborist)
Steve Ambler & Sons Tree Specialists Ltd
Email - vaughan@steveamblertrees.com
Mobile - 07961322908

Scott Ambler (Project Arborist)
Steve Ambler & Sons Tree Specialists Ltd
Email - scott@steveamblertrees.com
Mobile – 0777 2998 734

Mrs. Shona Carle (Woodlands Officer)
Newport City Council
Environment & Economy Department
Civic Centre
Newport
NP20 4UR
Email - shona.carle@newport.gov.uk
Telephone - 01633 232191

Jonny Kriel (Site Manager)
Bouygues UK -
jonny.kriel@bouygues-uk.com

16.0 LEGAL CONSTRAINTS

Tree Preservation Orders and Conservation Area Status in Wales

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

Felling License

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

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

Bats...Summary of Current Relevant Legislation

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

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

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

Under the Regulations it is illegal to:

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

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

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

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

Statute and Common Law.

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

17.0 LIMITATIONS OF THIS REPORT

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

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

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

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

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

18.0 GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil heave: *see* heave.

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

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

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

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

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

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

Trunk: the single main stem of a tree.

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

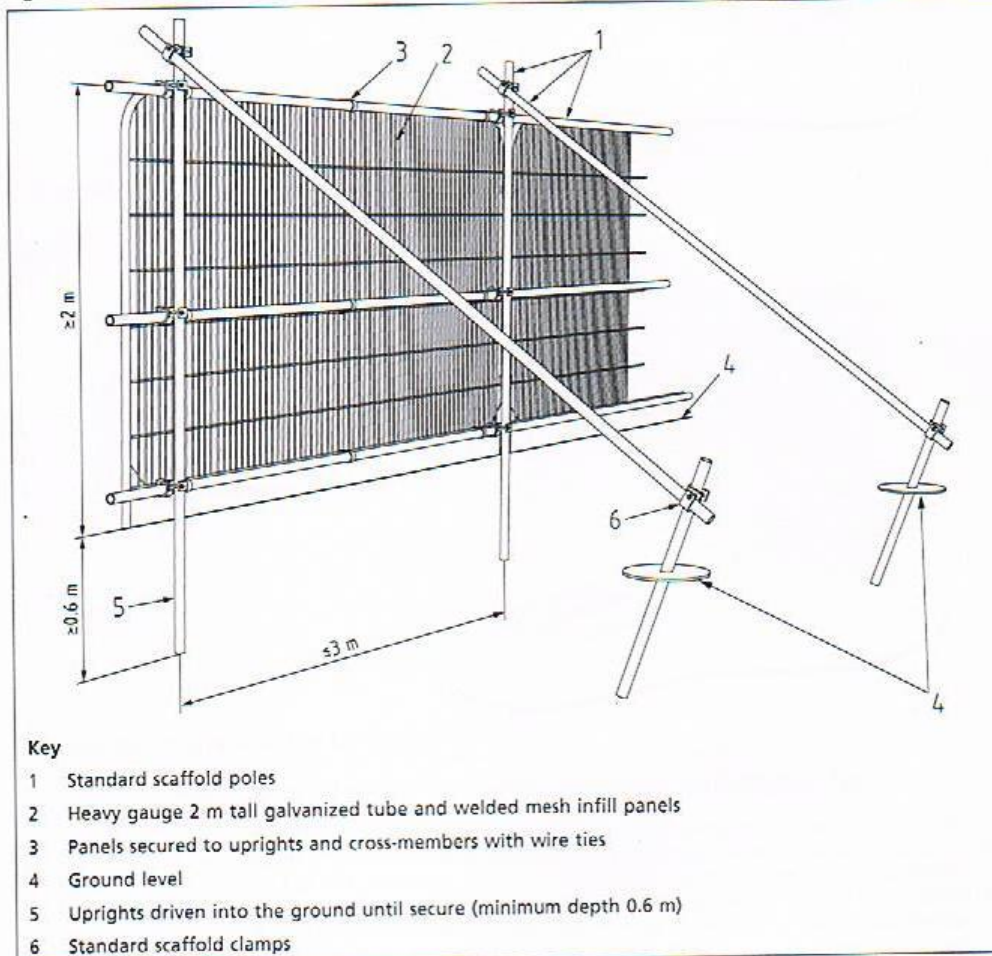
19.0 REFERENCES

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

British Standard Recommendations for Tree Work BS 3998: 2010

APPENDIX A - DEFAULT SPECIFICATION FOR PROTECTIVE BARRIER

Figure 2 Default specification for protective barrier

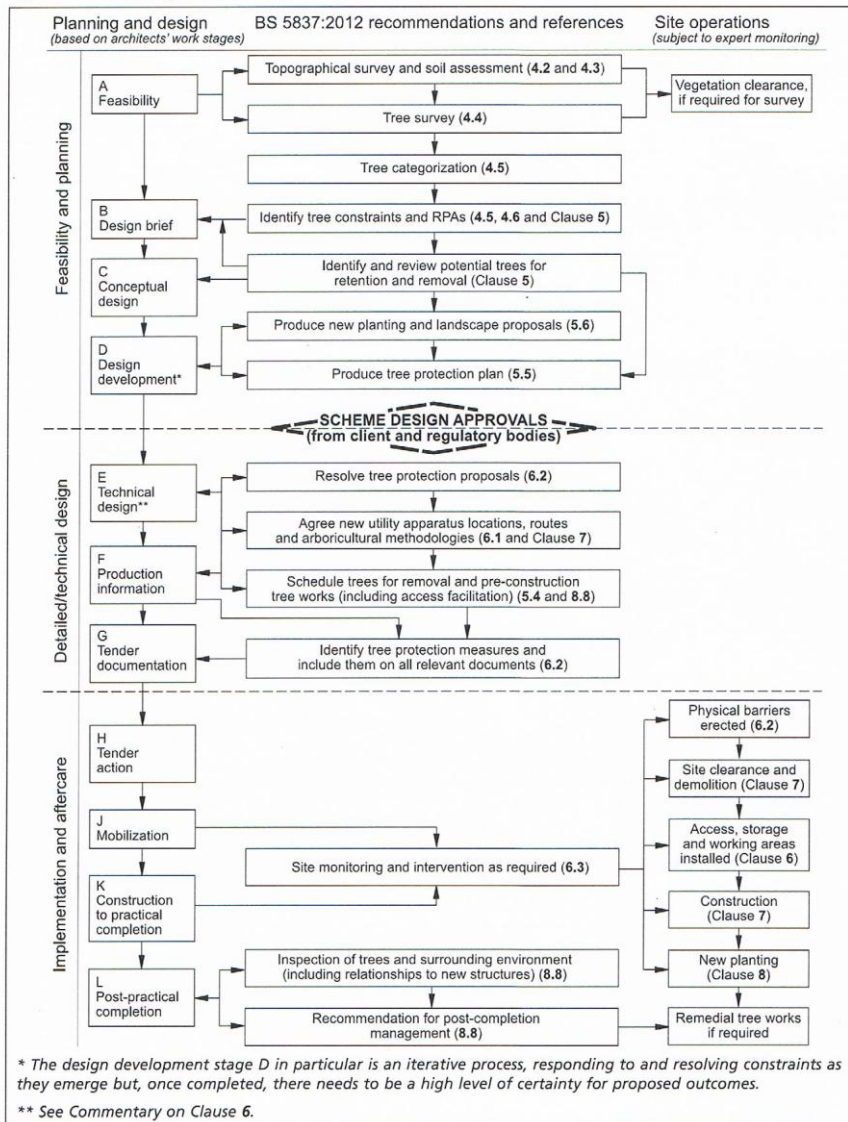


APPENDIX B - FIGURE 1 THE DESIGN AND CONSTRUCTION PROCESS AND TREE CARE

BS 5837:2012

BRITISH STANDARD

Figure 1 The design and construction process and tree care



APPENDIX D - TREE PROTECTION PLAN



Figure 3 Examples of above-ground stabilizing systems

