1 PRELIMINARY ARBORICULTURAL METHOD STATEMENT

Farmhouse Cheese Office, Overton Road, Wrexham, LL13 0LG

In accordance with BS5837:2012Trees in relation to design, demolition & construction – Recommendations

Overview

1.1 This Preliminary Arboricultural Method Statement (AMS) provides best practice measures to be adopted protect retained trees during the development process. It has been prepared to inform the planning and the construction/development process.

1.2 The document also provides details of specific measures required to protect retained trees from potentially harmful activities such as the construction of hard surfaces within the RPA.

1.3 A copy of this report must be kept at each site and be permanently available for the duration of the development process. It can be:

- Included in the tender documents to identify and quantify the tree protection measures and management requirements.
- Used to plan the timing of site operations to minimise the impact to trees; and
- Referenced on site for practical guidance on how to protect trees.

1.4 A Tree Protection Plan (TPP) has been prepared to provide graphical illustration of the protection measures required.

Sequence of Activities

1.5 To ensure adequate protection of retained trees, the following activities should be adhered too:

- The Main Works Contractor (MWC) must be provided with a copy of this method statement and all associated attachment prior to the commencement of any site clearance, enabling or construction works.
- Undertake tree works and removals as detailed in this method statement.
- Erect tree protective fencing and install ground protection measures in accordance with attached plans.
- Brief all site operatives and sub-contractors on the requirements of tree protection measures and Construction Exclusion Zones across the site.
- Ensure site monitoring and report of the protection measures are undertaken in accordance with the Arboricultural Monitoring Programme

Supervision

1.6 A suitably competent and qualified arboriculturist will be appointed as the 'Project Arboriculturist; to provide advice to the site enabling and construction team and to supervise any works that have the potential to cause harm to retained trees.

1.7 Site inspections will be undertaken at key points in the development programme as well as at frequent intervals.

1.8 The Project Arboriculturist shall be the principle point of contract for the MWC on all matters relating to trees and shall liaise as required with the LPA tree officers.

1.9 An Arboricultural Monitoring Programme (AMP) has been prepared to support this method statement and is detailed in Table 1 below.

1.10 The full extents of site visits will be dependent on construction plans and details will be agreed during the pre-commencement meeting with the MWC.

Table 1 - Arboricultural Monitoring Programme

Details	Timing
Meet with the MWC to confirm extent of tree protection measures and agree any variations.	Pre-commencement
Site visit to check tree removals and pruning works have been undertaken Appropriately	During development
Site visit(s) to ensure Tree Protective Fencing have been installed correctly.	During development
Site visit(s) to supervise permanent ground protection installation within the RPAs of retained trees	During development
Site visit to address any snagging issues and confirm Tree Protective Fencing and temporary ground protection can be removed.	Post development

1.11 Any damage to TPF will be rectified as soon as practically possible and any machinery works ceased in the immediate vicinity until repairs are complete.

1.12 Following each site visit a File Note will be prepared and circulated to relevant project contacts and the LPA Tree Officer.

1.13 All tree protection measures will remain in place throughout the development phase.

1.14 The project arboriculturist will undertake site visits at key stages of the development process and a post-inspection report will be prepared after every site visit detailing observations and any recommendations for specific measures that may be required in the forthcoming period. A copy of this report will be sent to the LPA tree officer and circulated to the project team including the site manager for the main works contractor.

1.15 **Responsibilities**

1.16 It will be the responsibility of the MWC to ensure that the requirements included in this method statement are adhered to at all times and that the monitoring regime is adopted on site for the duration of the project.

1.17 The MWC will be responsible for contacting the retained project arboriculturist at any time issues are raised relating to trees on site. This includes but is not limited to:

- Additional tree pruning or removals.
- Amendments to or removal of tree protection measures.
- Access to Construction Exclusion Zones; and
- Potential impacts to retained trees (i.e. construction access, utility installation etc.) that have arisen since the preparation of this method statement.

1.18 The MWC will be responsible for ensuring any sub-contractors are suitably briefed on the necessary tree protection measures that are required on the site. This method statement and attached plans should be utilised in 'toolbox' talks.

1.19 If at any time pruning works or additional tree removals are required, permission must be sought from the relevant Local Planning Authority or Forestry Commission (as appropriate) before tree works commence. Any such approved works must be undertaken in accordance with BS3998:2010 Tree Work – Recommendations.

1.20 The MWC must also be aware of the need to comply with the Wildlife and Countryside Act (1981), Countryside Rights of Way Act (2000) and Conservation of Habitats and Species Regulations (2010) in relation to any additional tree works

Tree Removals

1.21 Trees for removal have been noted on the AIP with red hatching and a dashed red outline.

1.22 Great care should be taken during the tree removal process to ensure that retained trees are not adversely impacted. The following methodology should be adhered to at all times:

- Any machinery used during the tree removal process be sited outside the RPA of retained trees.
- The felling of trees will be undertaken to avoid damaging retained trees.
- Where the removal of stumps of felled trees is required, great care will be taken to ensure any retained trees in close proximity remain free from harm.

1.23 All works will be conducted by a suitably qualified arborist working in accordance with BS3998:2010 Tree Work – Recommendations.

Arboricultural Method Statement – Tree Works Schedule

Tree / Group	Category	Required Works	Method / Restrictions	Supervision Required
T009	C	Facilitate excavation for new hardstanding	Hand-dig only within/adjacent to RPA; retain roots >2.5 cm; no severance of roots >10 cm; ground protection required along access route	Yes – excavation & ground protection installation
T017	C	Facilitate foundation installation near RPA	No mechanical excavation on tree-facing side; hand-dig/air-spade only; trench to be lined with non-permeable membrane to prevent leachate	Yes – foundation trenching & membrane installation
T018	C	Works adjacent to parking reconfiguration	Avoid cutting into RPA from tree-facing side; hand-dig where required; assess any exposed roots	Yes – excavation adjacent to RPA
T020, T021 & G022	C	No works permitted within CEZ	Maintain full fencing around RPA; no access or storage	No – periodic compliance checks only
All retained trees	—	Pre-construction tree works (crown lifting, deadwood removal if specified)	Works to be carried out by qualified arborist in accordance with BS3998	No – unless pruning occurs within RPA
All retained trees	—	Installation of Tree Protection Fencing	Install fencing exactly as shown on TPP; CEZ to be maintained throughout	Yes – initial installation
All retained trees	—	Removal of existing hard surfaces within RPAs	Remove under supervision; avoid root tearing; replace immediately with temporary ground protection	Yes – during removal

Protection of Retained Trees

1.24 Where practical all retained trees will be protected through the construction phase using barriers to limit the potential for harm from machinery, materials or personnel.

1.25 The primary form of protection is the use of fencing around the trees to prevent access within a protected buffer zone. This buffer zone is a Construction Exclusion Zone (CEZ) and there will be no access within it during the construction phase.

Tree Protection Fencing

1.26 Protective fencing will be erected around retained trees prior to the commencement of any site works including mobilisation of machinery and materials.

1.27 The location of the fencing has been marked on the TPP prepared for this AMS. This is shown as a black dashed line, and the CEZ has been highlighted as orange hatching behind the fencing.

1.28 The Tree Protective Fencing will require adjustment between Phase 1 and Phase 2 works. This will need to be done in liaison with the project arboriculturist.

1.29 The appropriate form of fencing for this project will be wire mesh panels that will be supported on the ground by a rubberised foot that will in turn be pinned to the ground using metal stakes driven a minimum of 500mm into the ground. An example of the fencing panel construction is provided in below.

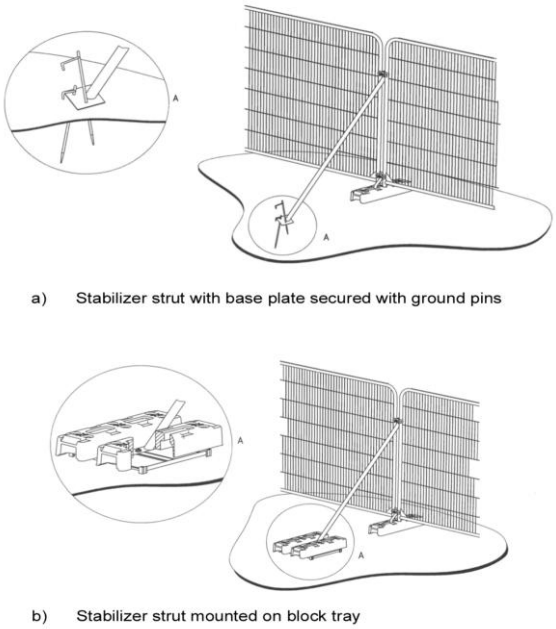


Fig 1. Tree protection fencing specification (extract from BS 5837: 2012)

1.30 Weather-proof notices shall be attached to any protective fencing located adjacent to retained trees displaying the words “Construction Exclusion Zone” and listing restrictions which apply. All personnel must be made aware of these restrictions.

Tree Protection Area

KEEP OUT

Do **not** move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

An example of a suitable sign for the fencing is provided in Fig 2.

Construction Exclusion Zone (CEZ)

1.31 The CEZ is the area identified by the Project Arboriculturist as the area to be protected during development from Site clearance and construction work through the use of barriers and/or ground protection to ensure the successful long-term retention of a tree. Fencing or ground protection shall not be taken down or relocated at any time without prior agreement and/or Site supervision as recommended by the Project Arboriculturist.

1.32 All areas excluded by protective tree fencing shall be treated as CEZs and the following restrictions shall apply:

- No construction activity can occur within these areas.
- No works on trees unless agreed by the Project Arboriculturist.
- No alterations of ground levels or conditions.
- No chemicals or cement washings.
- No excavation.
- No temporary structures.
- No storage of soil, rubble or other materials.
- No vehicles or machinery to be used or parked without appropriate ground protection measures as per BS5837 recommendations. This will require the use of a proprietary system of reinforced concrete slabs/steel road plates on a compressible layer, or side butting scaffold boards/ 18mm plywood sheets on a compressible layer. The type of ground protection used shall be appropriate for the potential loading applied.
- No fixtures (lighting, signs etc.) to be attached to trees.
- No fires within 10 metres of the canopies of any tree or hedgerow.

*Site huts, provided they are of the “Jack Leg” type, can be sited to act as ground protection for the duration of the construction.

Removal of Existing Surfaces

1.33 Any enabling works within the RPA of retained trees will be undertaken in accordance with the following methodology:

- Care must be taken to avoid physical contact with the canopies of trees during the enabling works. A banksman will be used where such conflicts could occur.
- If localised pruning is required, the LPA Tree Officer shall be contacted and the scope of works agreed in writing.
- All machinery used to undertake enabling works will be sited outside the RPAs of existing trees or working from on top of existing hard standing.
- Debris may be removed from the RPAs of retained trees by using machinery with a long reach or through pedestrian access. Care must be taken to avoid

damage to the existing ground surface to ensure the rooting environment remains sustainable post demolition.

- The removal of existing hardstanding or foundations within the RPAs of retained trees will be undertaken using hand tools only. Appropriate tools for manually removing debris may include a pneumatic breaker, crowbar, sledgehammer, pick, mattock, shovel, trowel and fork.
- Severance of roots over 25mm diameter should be avoided unless advised by the retained Project Arboriculturist. Secateurs and a handsaw must be available to deal with any roots that are exposed. Where roots will remain exposed for any period of time the roots must be wrapped in hessian sacking for protection.

Temporary Ground Protection

1.34 New temporary ground protection should be capable of supporting any traffic entering or using the Site without being distorted or causing compaction of underlying soil. The ground protection might comprise one of the following:

- **For pedestrian movements only a single** thickness of scaffold boards placed either on top of a driven scaffold frame so as 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.
- **For pedestrian-operated plant up to a gross weight of 2 t** 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.
- **For wheeled or tracked construction traffic exceeding 2t gross weight**, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the potential loading to which it will be subjected.

General Canopy Protection

1.35 Since the canopies of retained trees may be in close proximity to areas of plant operation, the following restrictions will apply:

- All plant will be sited outside the defined RPAs of retained trees / groups, and the appointed contractor will ensure all relevant personnel shall be made aware of the location of branches and the need to avoid causing damage to them.
- Prior to the implementation of lifting operations, a representative from the equipment supply company shall visit the Site and ensure all operations can be completed without causing damage to retained trees. A lifting plan will be prepared and submitted for approval prior to all lifting operations. The lifting plan will make provision for the potential for damage of retained trees.
- All lifting operations will be completed under the close direction of a qualified banksman, who will be briefed by the appointed contractor as to the need to avoid damage the stems and branches of retained trees.

1.36 Should additionally tree removal or pruning be required the LPA Tree Officer shall be contacted and the scope of works agreed in writing.

Demolition

1.37 Any demolition works within the RPA of retained trees will be undertaken in accordance with the following methodology:

- Demolition works will be undertaken using a 'top down, pull back' technique. This will minimise the potential of physical harm to retained trees.
- Care must be taken to avoid physical contact with the canopies of offsite trees during the demolition works. A banksman will be used where such conflicts could occur.
- If localised pruning is required, the LPA Tree Officer shall be contacted, and the scope of works agreed in writing.
- All machinery used to undertake demolition works will be sited outside the RPAs of existing trees or working from on top of existing hard standing.
- Debris may be removed from the RPAs of retained trees by using machinery with a long reach or through pedestrian access. Care must be taken to avoid damage to the existing ground surface to ensure the rooting environment remains sustainable post demolition.
- The removal of existing hardstanding or foundations within the RPAs of retained trees will be undertaken using hand tools only. Appropriate tools for manually removing debris may include a pneumatic breaker, crowbar, sledgehammer, pick, mattock, shovel, trowel and fork.
- Severance of roots over 25mm diameter should be avoided unless advised by the retained Project Arboriculturist. Secateurs and a handsaw must be available to deal with any roots that are exposed. Where roots will remain exposed for any period of time the roots must be wrapped in hessian sacking for protection.

Supervised Excavation

1.38 Excavation within and adjacent to RPAs are to be undertaken under direct on-site arboricultural supervision. Excavation will consist of a mixture of mechanical and manual excavation. Initial excavation will be undertaken by hand under to a minimum of 200mm deep of any excavation, the soil is to be loosened with the use of a fork or pick and then cleared with the aid of an air-spade, air-vac or shovel.

1.39 There after excavation can be undertaken using an excavator with a suitably sized toothless grading bucket using a grading motion rather than digging and taking no more than 10 - 20mm deep swipes at any time, if any roots are discovered mechanical excavation will be stopped immediately and manual excavation will resume to expose the root.

1.40 All roots to be cut will be cleanly severed with the use of a hand saw or secateurs. The edge of the excavation closest to the retained trees will be covered over with damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination by concrete. If appropriate soil beneath the depth 600mm may be sheet piled, tegular piled or individual piles. Any deeper excavations may be

undertaken by a machine provided it works form outside of the RPA or has appropriate ground protection in place to move and work upon

Construction

1.41 Prior to the construction of the proposed development, a copy of the construction method statement should have been submitted and approved by the project arboriculturist and LPA tree officer, to ensure that there is no conflict with this method statement. All excavations and construction work within or immediately adjacent to RPAs or canopies of retained trees is to be undertaken under the direct on-site supervision of an arboriculturist.

Foundation design

1.42 Concrete foundations/slabs

- Prior to concrete being poured to form the foundations/slabs within or immediately adjacent to the RPAs of retained trees the excavation is to be lined and sealed to prevent any leaching of the concrete into the soil and causing desiccation of retained roots by concrete run off.

Hazardous Materials

1.43 Any mixing of cement-based materials is to take place outside the RPAs of all trees. Provision shall be made to ensure that the mixing area is contained so that no water runoff enters the RPA of any trees. All mixers and barrows shall be cleaned within this dedicated mixing area.

1.44 All other chemicals hazardous to tree health, including petrol and diesel, are to be stored in suitable containers as specified by the Control of Substances Hazardous to Health (COSHH) Regulations (HMSO, 2002: The Control of Substances Hazardous to Health Regulations 2002), and kept away from the RPAs.

Contractor compound, site huts and welfare units.

1.45 The contractor's compound, including all site huts, storage and welfare units, will be located outside the CEZ of retained trees.

Service installation overhead and underground

1.46 Where new services are required within the Root Protection Areas (RPAs) of retained trees these will be undertaken in accordance with the following methodology.

1.47 Should plans deviate when on-site works commence and require additional service installation with the RPAs of retained trees, the Project Arboriculturist must be consulted before being installed.

1.48 Should it not be possible to redesign new services outside the RPAs of retained trees then the installation of any services or ducting must be carried out following the

National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

1.49 Any such services which are required within the RPAs of retained trees must adhere to the following methodology:

General Guidance

- Any machinery used to remove existing hardstanding will work from on top of existing hardstanding or from temporary load-bearing matting.
- Any topsoil that is stripped will be reinstated once the project is complete.
- Any exposed roots will be wrapped in hessian to prevent desiccation. All hessian will be removed prior to backfilling with soil.
- Replaced soil will be compacted by footfall and the use of whacker plates or rollers are prohibited. The soil should be left slightly mounded to help with settlement.

Airspade

- The air spade will be used by an experienced operator, who is also a trained arboriculturist.
- The air spade should enable the flow of air to be controlled by a hand-trigger.
- The air spade compressor will be fitted with crack oil filters to prevent oil spillage onto the ground to prevent any contamination of the soil. Spill kits should be kept readily available.
- The air spade will be used in short bursts to loosen soil around major roots (>50mm diameter) and loosened soil will be removed using hand-tools only.
- A barrier will be erected around the extents of the trench to minimise soil being blown away from the excavation area.
- Hand-tools will be utilised to loosen soil around tree roots or areas that cannot be penetrated by the air spade. These tools may include spade, mattock, fork and trowel.
- Wherever possible tree roots will be retained. This includes fibrous roots that may be exposed during the excavation process.
- Root severance of any roots between 10-50mm diameter will only be undertaken in liaison with the project arboriculturist.

Hand-dig

- Appropriate tools for manually removing debris may include a crowbar, sledgehammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow.
- Wherever possible tree roots will be retained. This includes fibrous roots that may be exposed during the excavation process.
- Root severance of any roots between 10-50mm diameter will only be undertaken in liaison with the project arboriculturist.

Soft Landscaping

1.50 New tree and shrub planting is proposed in close proximity to existing trees. If new planting is required within the RPAs of retained trees, then the following methodology must be adhered too:

- Wherever possible tree roots will be retained. This includes fibrous roots that
- Wherever possible tree roots will be retained. This includes fibrous roots that
- Wherever possible existing levels will remain in situ. A De-Vegetation strip (<10mm depth) will be undertaken by machinery working from outside the RPAs of retained trees and under supervision of the project arboriculturist.
- It may be appropriate to utilise hand-tools in close proximity to the base of trees, or where surface roots are evident. Appropriate hand tools may include pick, mattock, shovel, trowel and fork.
- Severance of tree roots will be avoided unless advised by TFL.
- The use of scarifiers or cultivators within the RPAs is strictly prohibited.
- Introduction of topsoil within the RPAs of trees will be limited (maximum 50mm depth). This should be introduced via machinery working outside the RPAs and distributed by hand-tools only.

Post Development

1.51 No fencing or other protective measures will be moved, dismantled or taken off site until the Project arboriculturist has confirmed that all machinery has been removed from the site and any construction activity that could cause harm to retained trees has been completed.

1.52 The project arboriculturist will review the condition of the trees post-construction to check for signs of intolerance to the change in conditions, the effect of development works and any accidental damage.

1.53 This may result in additional remedial measures or tree works to rectify the harm caused.

1.54 A site inspection note will be provided to the MWC detailing any remedial treatments/tree works