

ARBORICULTURAL METHOD STATEMENT

**BS 5837:2012 Trees in Relation to Design,
Demolition and Construction-Recommendations**

**Method Statement For
Car Park Construction Works Adjacent to Trees
At
Erddig Hall, Wrexham LL13 0YT**



For:
The National Trust
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lingard•farrow•*styles*

landscape architects urban designers environmental consultants

LINGARD FARROW STYLES

Landscape Architects, Environmental Consultants, Urban Design.

9 College Hill
Shrewsbury
Shropshire SY1 1LZ

The Studio, Farm Lodge
Leighton, Welshpool
Powys SY21 8HJ

Telephone: 0333 456 1132

Email info@lingardstyles.co.uk

www.lingardstyles.co.uk

ARBORICULTURAL METHOD STATEMENT

Written	Checked	Approved	Revision
Peter Styles, Dip Hort Kew; Dip LA; FLI; FRSA	TF		



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1.0 INTRODUCTION

This method statement is prepared to support the discharge of conditions in respect of the granted planning permission P/2018/0750, for the construction of a car park at Erddig Hall, Erddig, Wrexham. As part of the planning application a Tree Protection Plan (TPP) is submitted for approval.

The approved Arboricultural Impact Assessment ref. Lingard Farrow Styles 2973 Dec 2015 Rev A informs this statement.

2.0 EXISTING TREES

The existing trees, which are subject to this statement, are located within an existing visitor car park tree and includes 78 no assessed and retained trees. The Tree Assessment was carried out in accordance with the methodology described in **BS 5837:2012: Trees in Relation to Construction, British Standards Institute.**

Further assessments of the existing trees were carried out by Lingard Farrow Styles in November 2018.

To ensure adequate supervision during construction works the services of an arboriculturist will be retained to provide a watching brief. This service will be undertaken by the Erddig National Trust Head Gardener Glyn Smith and Peter Styles, a technical member of the Arboricultural Association.

3.0 RATIONALE FOR TREE ROOT PROTECTION

The part of the tree most susceptible to damage is the root system, which because it is not immediately visible, is most frequently ignored. The tree main stem and branches are also vulnerable. Damage or death of the root system will affect the health, growth, vigour, life expectancy and safety of the rest of the tree. This is because the majority of the tree's root system is found within the top layers of the soil, extending radially for a distance frequently in excess of the tree's root height. All the structural roots are generally found within the top 300 - 450mm of the soil (*Dobson M, Tree Root Systems*)

The nearest main tree to the proposed service trench is tree T021 and approximately 20% of its RPA is within the existing paved areas to the south of the tree. In this case it is anticipated that most of the root spread will be within the soft landscape areas to the west of the tree and therefore the RPAs and subsequent protection during construction should reflect this.

3.0 ARBORICULTURAL METHOD STATEMENT (Demolition and Construction Stages)

3.01 Once layout proposals have been finalized the British Standard recommends that a Tree Protection Plan (TPP) is prepared. This is Lingard Farrow Styles **dwg no. dwg.no 2973-009 rev B.**

The retained trees will be protected with fencing, in accordance with BS 5837:2012, prior to commencement of site construction works (see appendices). Site supervision during any proposed tree work operations are to be undertaken in conjunction with and agreement with the Local Authority Arboriculture Officer.

A watching brief, by a suitably qualified person, will be required during construction works to monitor protection and construction works around the trees. (see section 2.0)

3.02 The Root Protection Area (RPA)

This is established using Table 2 from the standard BS 5837:2012 which is a 12 x multiplier of the stem diameter when measured at a height of 1.5m above ground level or x10 in the case of multi stemmed trees. The precise distance required by each tree as a Root Protection Area is expressed as a radius as shown on the Tree Protection Plan. These distances provide an Exclusion Zone for site construction works. The erection of a substantial temporary barrier is required as illustrated on **dwg.no 2973-009 rev B.** These measurements or distances are provided in metres as a radial measurement, unless otherwise stated, and which is taken from the centre of the stem.

3.03 Rationale for Tree Protection

The parts of the root system which are active in water and nutrient uptake are very fine, typically less than 0.5mm diameter. It is essential that the conditions in the soil remain conducive to healthy growth of these fine roots so that water and nutrients necessary for healthy tree growth can be absorbed, in addition to water and nutrients, roots, to function, require oxygen from the soil for respiration. Diffusion between the soil and the atmosphere is essential. Anything which disturbs this balance will affect the condition of the root system and in turn the health of the tree. Compaction of the soil within the rooting zone of a tree will create long term damage through preventing respiration and the percolation of water. Vehicles tracking over the soil are responsible for such damage and such action must be reduced or avoided during construction works.

3.04 All weather notices.

On completion of the exclusion zone protection by tree protection barriers and/or ground protection construction works can commence. All weather notices should be erected on the barriers with words such as '**Construction Exclusion Zone – Keep Out**'. (see Appendix Fig 2)

3.05 Demolition works around trees.

1. Carefully cut down and remove from the construction site existing trees as indicated on **dwg no 2973-009 rev B**. Any shrub growth vegetation is to be removed by hand and all tree stumps over 150 diam girth to be ground off by stump grinder.
2. Lift any hard surfaces within the RPA's by hand or mini –digger working northwards from the trees. Remove arisings from site. Once the surfacing is removed the compacted sub base can be loosed to a depth of 150mm by hand.
4. Remove all major protrusions such as rocks and large stones by hand from the RPA's. Do not compact or scrape the surface to grade off high spots.
5. Areas of compaction outside of the RPA will be decompacted by hand or machine to a depth of 150mm after demolition activities are completed.

3.06 Construction works around trees.

See Lingard Farrow Styles **dwg.no 2973-015 rev B** for proposed construction areas around existing trees .

6. To facilitate any drainage trench excavation and surfacing works, first carefully scrape away topsoil area with a hand tool to a depth of 50mm or until primary tree roots are located. Carry out initial hand work investigation to locate any drainage trench position within the RPA's using a metal bar and taking care not to damage existing tree roots. All roots over 50mm diameter are to be left undisturbed.
7. Excavate service trench to the minimum depth and width indicated 750mm with hand tools. Any rock formation encountered to be carefully removed with small machine digger ensuring that no tree roots over 50mm diameter are severed. Remove all arisings to stock pile for reuse. Subsoil and top soil to be stored in separate stock piles.
8. If tree roots are encountered during excavation protect them with damp hessian during the construction works. Remove hessian prior to backfilling. Any tree roots

under 50 mm diameter that are damaged are to be cleanly cut and removed with sharp hand tool.

9. Backfilling to trench to be carried out in reverse order with sub material lightly compacted and finished to formation level with excavated topsoil taken from stockpile.

3.07 Paving and surface finishes within the RPA. (see Lingard Farrow Styles. **dwg.no 2973-015 rev B** for location)

10. Soft landscape ground finish within RPA's to consist of topsoil and grass seed to ensure water and air penetration to tree roots. Topsoil to be to BS 3882:2007 'Specification for Topsoil and Requirements for Use'. Prior to the final grass seeding fill all major hollows with topsoil and level off by handwork.

11. A 'no dig' paving construction of permeable non-limestone aggregate over geogrid will be installed to the proposed new parking bays. To the west of the site, at the proposed pedestrian entrance, paving around the existing trees will consist of compacted hoggin type material over permeable membrane.

4.0 CONSTRUCTION EXCLUSION ZONE (CEZ)

4.01 Additional measures.

On completion of the exclusion zone protection by tree protection barriers and/or ground protection works can commence. All weather notices will be erected on the barriers

In addition, the following will be addressed or avoided:

- a)** Measures will be taken to ensure that boom jibs and wide loads do not operate in the Construction Exclusion Zone (CEZ). Any transit or traverse of plant in close proximity to the CEZ 's will be conducted under the supervision of a banksman to ensure that adequate clearance of trees is maintained at all times.
- b)** Material which will contaminate the soil e.g. concrete mixings, diesel oil and vehicle washings will not be discharged within 15m of the tree stem.
- c)** Fires will not be lit in a position where their flames can extend to within 15m of foliage, branches or stem. This will depend on the size on the size of the fire and the wind direction.
- d)** Notice boards, telephone cables or other services will not be attached to any part of the tree.

- e) The existing trees to be felled, that are adjacent to, or that lie within the continuous canopy of trees to be retained, will be removed in accordance with the requirements given in the British Standard for Tree Works BS.39998:2010. In some cases, a tree may have to be removed in sections to avoid damage.

5.0 PRUNING

The pruning of the existing retained trees will be undertaken by qualified National Trust horticultural staff under the direction of Glyn Smith the Erddig Head Gardener.

There is no specific pruning requirements for each retained tree. Each tree will be considered on its own merits at the time of pruning . One of the main the objectives is to develop the trees as traditional fruit orchard trees, with maximum fruit production, whilst retaining the historic value and character of the more mature specimens. Some restorative pruning will be required.

The objectives will seek to maintain the shape and balance of the trees on their established frameworks. Whilst some limited tree management has been carried as part of the normal gardens management some of the trees will require further work as follows:

- Reduction of extensive mistletoe growth to reduce canopy weight and improve tree vigour. It is considered essential to retain a percentage of mistletoe for harvesting, wildlife value and visitor interest.
- Removal of dead, diseased and damaged wood.
- Reduction in overcrowded growth and thinning out of canopies to selected trees including specimens with inclined form.
- Continued management to specimen Hazels by coppicing.
- Specimen trees nos T74 and T75 will require their canopies lifting to 2.5 m above ground to facilitate safe movement of pedestrians.

It is anticipated that the restorative pruning will be undertaken over a period of several years. The pruning will be carried out during January/February 2019 and will be conducted in accordance with the requirements given in the British Standard for Tree Works BS.39998:2010.

5.0 APPENDICES

Fig 1 Protective Fencing

Fig 2 Exclusion Zone Signage

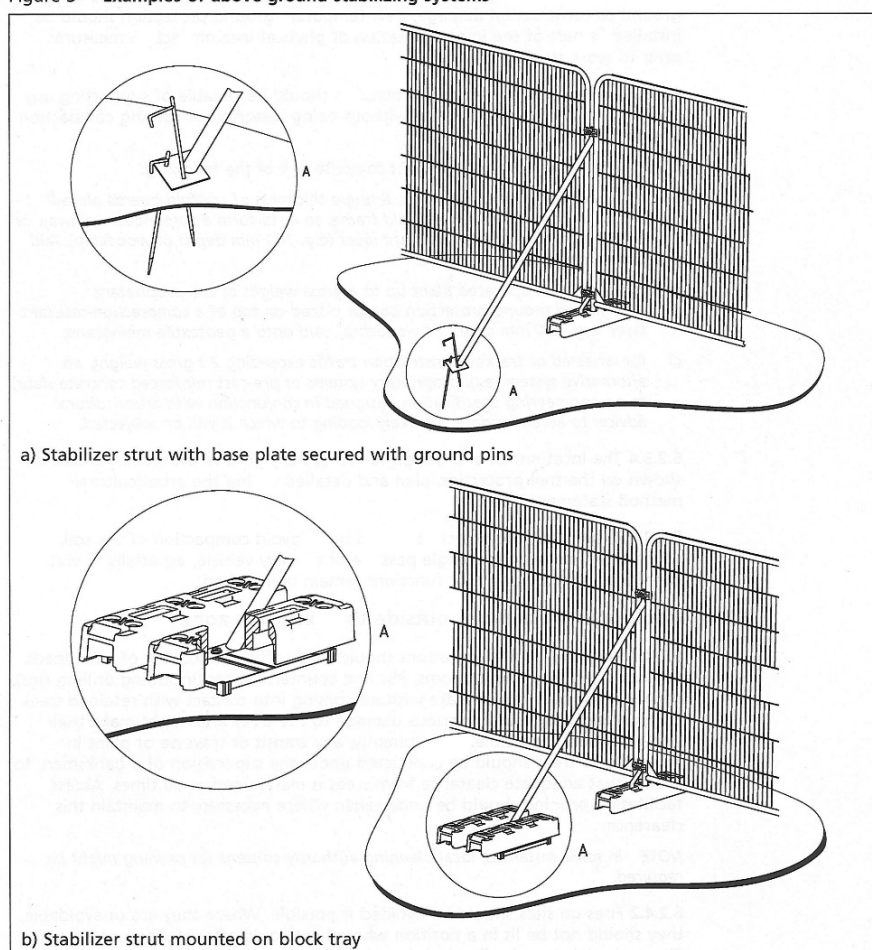
Fig 3 Tree Protection Plan (TTP) dwg.no 2973-009 rev B.

FIG 1. PROTECTIVE FENCING

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

FIG 2. EXCLUSION ZONE SIGNAGE



FIG 3. TREE PROTECTION PLAN (TPP) dwg.no 2973-009 rev B.