

Technical Note on Tree Protection at Corduff Park re. Proposed Development



Background:

As part of the Feasibility & Planning stage of the Design & Construction process for the proposed development at Corduff park, a BS 5837 Report, containing an Arboricultural Impact Assessment, Arboricultural Method Statement which will also include a Tree Protection Plan, should be carried out.

This is a Technical Note refers to three specific trees, 2 Yew trees (*Taxus baccata*) and one Lime Tree (*Tilia x europaea*), which were discussed and appraised, on Thursday 25th May 2023, in relation to their condition, the site and some of the constraints.

Points of note:

- The ground level around both the Lime and the Yew trees has been raised in the recent past.
- All three trees have been reduced/pruned in the past. Possibly to mediate the effects of compaction caused by the raising of the ground level.
- Both tree species react positively to pruning and can, in time, develop large crowns, providing valuable tree cover to the immediate area.
- The Yew trees have an added cultural value of being remnants of a previous designed landscape.
- The trees appear to have been the subject of a recent survey, indicated by the new 'Tree Tags' present.
- I would recommend an investigatory dig, using a combination of either 'Hand-dig', 'Air-spade' or Soil Suction', to confirm depth, condition and direction of roots into the raised soil area surrounding the Yew trees, in order to inform the possible option of either returning the soil to its original level or to confirm if the roots have colonised the current level and are functioning.
- Tree Protection barriers should be installed before any works begin or machinery arrives on site. See Appendix 1.
- Successfully preventing ground compaction and damage to the tree's rooting system during the construction phase needs to be adhered to from the outset. If any part of the arboricultural method statement is deemed unfeasible or needs to be altered in some way the on-site arborist should be consulted before any works re-commence.
- The removal of an old playground, within the RPA of the Yew trees, maybe required. In order to manage 'Hard Surfacing within the RPA' see appendix 2.

Root Protection Area (RPA)

The RPA's for single stemmed trees are calculated, using the relative method as per BS 5837, as an area equivalent to a circle with a radius 12 times the stem diameter.

In general, the RPA for a tree, should initially be plotted as a circle centred on the base of the stem unless pre-existing site conditions or other factors indicate to the contrary.

The recommended RPA's **should be treated as a minimum** and where possible, more area should be allocated to the protection of rooting environments.

The two Yew trees:

The existing ground conditions and other site factors in relation to these tree's rooting environments (eg. the construction of a wall between the Yew trees and the adjacent creche, the raised soil levels around all three trees, the entrance road and footpath adjacent to the Lime), would suggest that their rooting area is asymmetrical, in favour of the adjacent open grassed area.

When plotting the RPA's, a polygon of equivalent areas, which will overlap, should be applied to reflect this.

The RPA for the single stemmed Yew tree has been calculated as **290 m²** (The radius of its nominal circle = 9.6m)

The RPA for the x3 stemmed Yew tree has been calculated as **272 m²** (The radius of its nominal circle = 9.3m)

The Lime tree:

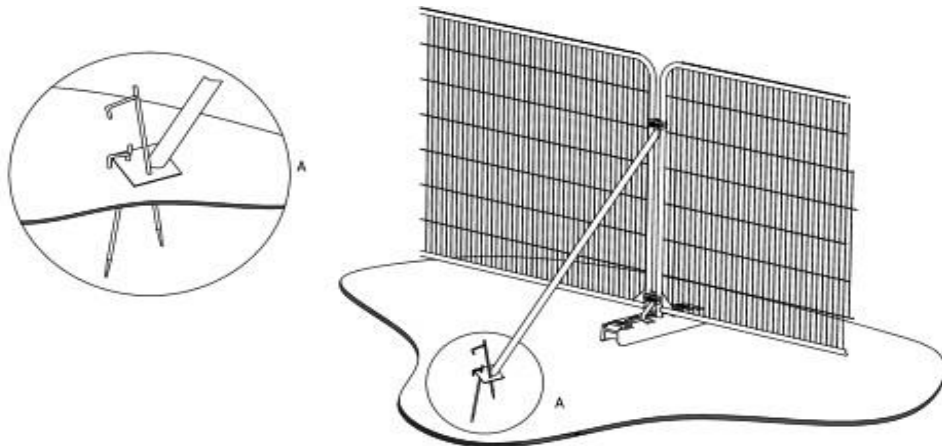
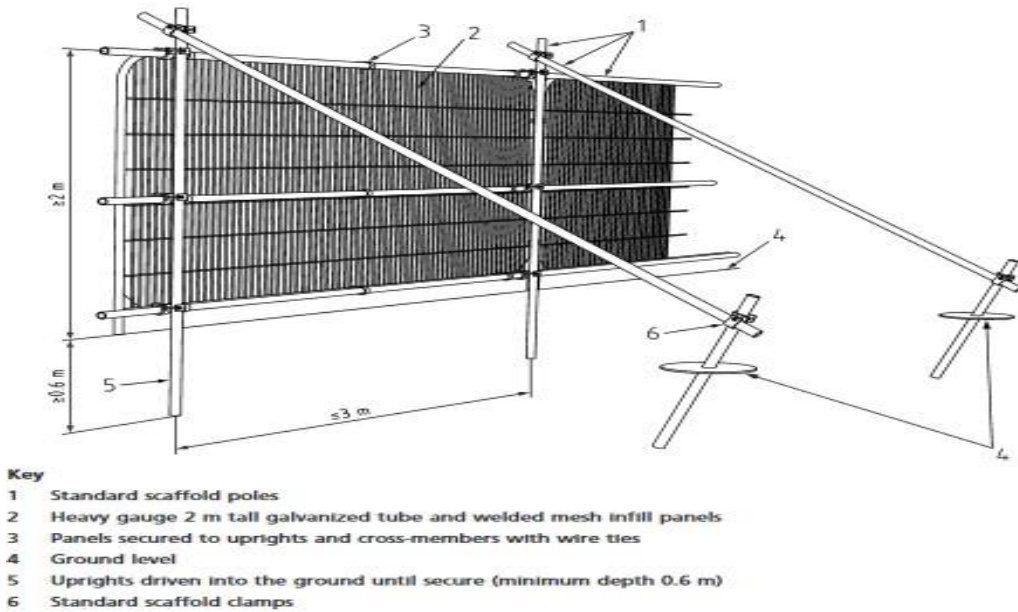
Its RPA has been calculated as **177 m²** (The radius of its nominal circle = 7.5m)

Summary of recommended RPA's

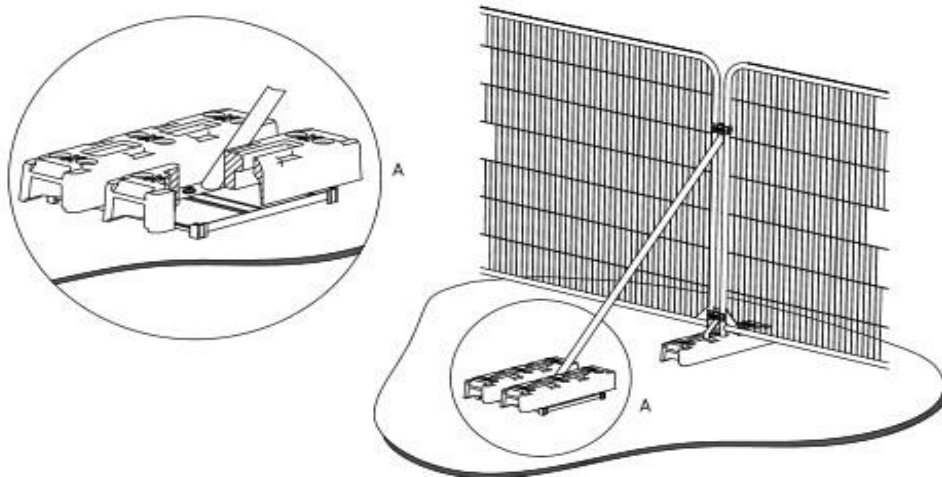
Tree	RPA	Radius of its nominal circle
Single stemmed Yew	290 m ²	9.6 m
Yew x3 stemmed	272 m ²	9.3 m
Lime	177 m ²	7.5 m

Appendix 1. Installation of Protective Barriers and Ground Protection:

Below are illustrations as recommended in BS 5837. These illustrations provide a visual representation of possible options for the construction of the protective fencing.



a) Stabilizer strut with base plate secured with ground pins



Removal of Tree Protection Barriers

The tree protection barriers will be assessed and signed off by the on-site arborist prior to their removal. During the removal of the barriers care will be taken to avoid any unnecessary damage to the trees. If machinery is being used, they should remain on the hard surfaces and outside the RPAs during the dismantling operations.

Ground Protection

Where the RPAs of the trees selected for retention extend beyond the proposed location of the protective fencing adequate ground protection will be required. Where the RPA extends under existing hard surfaces to be retained there will be no need for additional protection. Where there is no existing hard surface present ground protection must be used in order to protect the soils from compaction.

For pedestrian movement the construction of an appropriate raised walkway or the use of load bearing geotextile membrane would be required.

For the use of machinery within the RPA the appropriate method should be selected depending on the weight of the machinery – inter-linked ground protection boards, compression resistant layers of geotextile membrane or pre-cast reinforced concrete slabs.

In all cases the objective should be to avoid compaction of the soil so that the tree root functions remain unimpaired.

Installation of Underground Services

Where possible the location, direction and installation of new underground services should be designed so as not to enter the RPAs of retained trees. Where it is not feasible to re-route the services, the excavations should be done with hand tools in conjunction with an air-spade. The methodology for trenchless installation can be found in NJUG Vol.4 : Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

During Construction Work

The tree protection barriers will be maintained at all times for the duration of the construction works. Any interference with or damage to the tree protection barriers should be recorded and the on-site arborist informed.

The location of the tree protection barriers will be visible on the Tree Protection Plan (TPP) and a copy should be retained on-site for reference at all times.

No machinery will enter the RPA exclusion zones for the duration of the on-site works. No excavations will take place within the RPAs as outlined on the TPP. The ground levels within the RPAs will not be altered at any stage of the construction works

All diesel, petrol, concrete and other materials hazardous to the health of the trees will be kept within the confines of the designated storage area for the duration of the construction works

No trees will be used to support cables, wires or signage

All on-site personnel should be briefed on the RPAs of the retained trees and their measures and requirements during their initial site induction

Appendix 2

Tree protection during demolition

- Where demolition is proposed on a site where trees are to be retained, access facilitation pruning should be undertaken as necessary to prevent injurious contact between demolition plant and the tree(s). In some cases, working space may be provided by temporarily tying back tree branches. Pruning or tying should be undertaken in accordance with a specification prepared by an arboriculturist.

NOTE The local authority will be able to advise whether the trees are under statutory protection such that consent for tree works might be required.

- When demolishing a structure (including underground structures) within what would otherwise be the RPA, barriers should be erected, and ground protection installed, to protect the underlying soil to the edge of the existing structure.
- All plant and vehicles engaged in demolition works should either operate outside the RPA, or run on the ground protection. Where such ground protection is required, it should be installed prior to commencement of operations.
- Where trees stand adjacent to structures to be removed, the demolition should be undertaken inwards within the footprint of the existing building (often referred to as “top down, pull back”).

NOTE Where there is a significant build-up of dust on the foliage, it might be necessary to hose down the tree(s).

- The advice of an arboriculturist should be sought where underground structures present within the RPA are, or will become, redundant. In general, it is preferable to leave such structures in situ, as their removal could damage adjacent tree roots.
- 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. If a new hard surface is to be laid, it might be preferable to leave any existing sub-base in situ, augmenting it where required.

