

Draft Arboricultural Method Statement

Land in Churchfield Lane, Kexborough, Barnsley, S75 7DN

1.0 Forward

i) The purpose of this report is to aid the preservation of trees shown to be retained at and adjacent to the site shown on the attached plan. Trees can easily be retained and effectively protected during the proposed redevelopment of the site, by clearly setting out tree protection methods, construction techniques and working practices. This document provides this information, including principles that are approved and enforced by local planning authorities.

ii) The following points are explained and qualified in more detail in this report and this summary is intended for quick reference only. Any actions consequent to this summary should be discussed with the author of the ensuing authorised document before being undertaken, in order to prevent potential breach of tree protection legislation, whether by planning condition, area planning designation or specific tree preservation order (which may or may not apply to individual trees, groups, hedges of any size), etc.

iii) This document will give site specific instructions on the methods required to protect the existing tree stock agreed to be retained. These methods are set out in a logical sequence of operations and include:-

- Pre-construction meeting: To run through the arboricultural method statement (AMS) and ensure all relevant parties are familiar with its contents and show the trees concerned and where protection will be required.

- Execute Tree works to BS3998:2010 'Tree Work': These works are contained in the tree schedule and may comprise crown raising, crown reduction, crown thinning, dead wood removal, removal of crossover branches, weak fork treatment, pollarding etc. See Schedule for a tree by tree list of works.

- Tree protection fencing and exclusion signage: To BS5837:2012 or other agreed approach.

- Ground protection: Techniques to avoid compaction, disturbance or contamination of the root environment.

- Ground works, foundations and services: Methods to allow building operations including service routing and special measures where root protection areas (RPA's) are unavoidably breached. To include specialist construction methods

- no-dig solutions for footpaths and paved areas, where allowable, in proximity to trees without damage to the tree, from root damage, or to the buildings, either from roots or from ground desiccation and heave.

- Demolition of structures

- Erection of scaffolding for construction
- General tree care measures and awareness
- Site monitoring

iv) The BS recommendations are made for appropriate barriers to exclude construction from RPA's: The RPA for each tree or hedge is provided in the tree survey schedule. The protective barriers are sacrosanct and no construction activities shall take place within this zone. This fencing should be erected in position prior to any demolition or construction and be maintained in position for the duration of the development process. Where it has been agreed that vehicular or pedestrian access for construction operations can be located within the RPA a combination of barriers and ground protection should be adopted. Where the construction of permanent hard surface is considered acceptable within the RPA, a non-dig design solution should be used to avoid root loss caused by excavation - all details for these measures are set out in this document.

v) The Tree Protection Plan (TPP) will indicate retained trees, trees to be removed, the precise location of protective barriers and ground protection, service routing and specifications, areas designated for structural landscaping to be protected and suitable space for site materials storage and other construction related facilities. This document and the associated TPP may be endorsed by planning conditions, agreement or obligation as appropriate.

2.0 Relevant Tree Information

i) As the majority of tree roots are found in the upper metre of soil, development works, including for example even shallow excavation, soil compaction and soil contamination, can be harmful to trees in close proximity. Trees differ in their tolerance of root loss or disturbance, according to their age, species and/or condition. All protection works within this document will be in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'

ii) An assessment of the site's tree stock has been estimated and those trees to be retained are clearly shown on the Tree Protection Plan (TPP).

3.0 Methodology

i) References may include: British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'; British Standard 3998:2010 'Tree Work' and National Joint Utilities Group 'Guidelines for the planning, installation and maintenance of utility services in proximity to trees' 1995.

4.0 Construction and Tree Protection

Phase 1 - Pre Contract Meeting

i) An onsite meeting will be held if required, with all relevant parties; including the developer, appointed arboricultural supervisor and Local Planning Authority (LPA) representative. The purpose of this meeting is to record site features including tree condition, agree tree works

(detailed below), location of permanent and temporary access, location of site storage, the location of tree protection barriers and any pertinent time schedules for site operations.

Phase 2 - Agreed Tree Works

i) Proposed Tree Works - see attached plan

ii) All tree work is to conform to BS 3998:2010 'Tree Work' and to current arboricultural best practice. Tree works are to be undertaken by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover.

Phase 3 - Tree Protection

i) In order to exclude the CEZ from significant demolition and construction activity, protection barriers will be erected.

ii) Protection barriers will comprise a scaffold framework in accordance with BS 5837:2012 (The BS). The framework will consist of vertical and horizontal scaffolds with vertical tubes spaced at no more than 3m intervals and driven into the ground. Weld mesh (Heras or similar) panels will be securely fixed on to this framework with wire or scaffold clamps. Tubes will be firmed into holes in the ground made with post hole boring equipment. Post holes are to be no more than 30% larger than the scaffold tube. Supporting struts will be fixed to the inside of the barrier to ensure maximum rigidity (See Appendix1).

iii) Once the barriers have been properly erected in position, they are to be considered as sacrosanct and are not to be removed or altered in any way without prior approval from the LPA.

iv) Clear notices are to be fixed to the outside of the fencing with words such as 'PROTECTED AREA – NO ACCESS AND NO STORAGE OR WORKING WITHIN THIS AREA'.

v) All operatives and other relevant personnel are to be informed of the role of the exclusion barriers and their importance. A copy of the Tree Protection Plan will be displayed on site at all times during construction.

vi) It may be necessary to remove existing shrubs and other vegetation from under the canopy of trees or remove lower branches prior to erecting the fencing. Any works of this nature are to be carried out by hand.

vii) Where it has been agreed that vehicular or pedestrian access for construction operations can be located within a tree's RPA a combination of barriers and ground protection should be adopted to form the CEZ. For temporary pedestrian access the installation of a single thickness of scaffold boards over a compressible layer laid on to a geotextile membrane/ geoweb filled with washed shingle (20mm gauge) or supported by scaffold will be sufficient. However for vehicular access a system based on that detailed in Phase 4 should be adopted.

viii) The location of the protection barriers is indicated on the TPP. The position of the barriers is to be marked out with biodegradable marker paint on site and agreed with appropriate representatives from the LPA and Contractor. The barriers will be erected prior to any works

on site in the vicinity of retained trees, including demolition or the delivery of machinery, materials, plant or equipment to the site or any adjacent land. The barriers will remain in situ until final completion or a time agreed by the LPA and Contractor.

Phase 4 - Construction of Hard Standing, Drives and Parking Bays

i) The sections below relate to the construction of hard surfaces, for example, roads and paths, parking areas and bases for bicycle or bin stores not required to be to an adoptable standard and within the CEZ of retained trees.

ii) With reference to BS 5837, where the construction of permanent hard surface is approved within the CEZ, a non-dig design should be used to avoid root loss caused by excavation.

iii) The construction area is to be levelled by filling hollows and removing protrusions and hard landscaping. No soil excavation, other than the removal of a 'turf or vegetation layer' is to be carried out during this process and filling material should be of a porous nature to allow water and oxygen to reach the soil below. In the unlikely event that roots are required to be pruned, sharp cutting tools are to be used to ensure that minimum damage is caused. No roots, greater than a diameter of 25mm, are to be pruned without prior agreement with the appointed arboricultural supervisor or LPA representative.

iv) A geo-textile membrane (Terram or similar) is then to be laid over the whole surface, including any retained hard surfaces. This is to be fixed firmly into position with ground pegs.

v) Where edging blocks or stone are to be used to retain the drive surface within the CEZ, the mix into which they are set will be laid directly onto the geo-textile membrane over the supporting base. No deeper excavations are to be made to accommodate the footing of the edging detail.

vi) A geoweb material is then placed over the membrane and also fixed into position. An example material is attached at Appendix 3. An aggregate sub-base material is then introduced in to the geoweb. The depth of the sub-base aggregate should be the same depth as the geoweb and no less than 100mm. The aggregate should be a granular no fines material (typically 40-20mm). Not only will this material dissipate load and reduce soil compaction, it will permit easy passage of air (oxygen) to the rooting area of the tree below the surface.

vii) The sub-base material is to be compressed into position ready for the final surface treatment. This surface can also be used as a temporary works access route prior to the laying of the final surface.

viii) Final surface details for residential purposes will be of a porous nature such as gravel, block paviors or small paving slabs and should be approved by the LPA. In the usual way these should be bedded into a lean mix that is also highly porous. Final surface treatment can be installed as part of the landscaping works.

Phase 5 - Site Clearance

i) Reasonable notice will be given to the LPA as to the date of commencement of any demolition adjacent to retained trees. This will provide the LPA with the opportunity to visit the site and ensure that all tree protection methods are in place.

ii) Any buildings close to retained trees will be demolished from the inside. The removal of light structures, low walls, kerb stones and tarmac surfaces for example will be carried out by hand within the CEZ.

iii) Areas of hard standing to be removed within the CEZ can be broken up using a vehicle mounted pneumatic drill starting from the end point of excavation working on the hard standing moving backwards as the surface is broken up. At no point will the vehicle enter soft ground within the RPA. Material can then be removed by hand without monitoring, but if a vehicle is to be used monitoring by an arboriculturist will be required. Any vehicle used in this way must work from the existing hard standing and not enter soft ground at any time.

Phase 6 - Ground works and infrastructure

i) Spoil, including soil and rubble will be removed from site and not stored against any protection barriers or over any ground protection. Only predetermined access routes with appropriate ground protection will be used to during this process.

ii) Construction of foundations is confined to areas beyond the CEZ therefore no specialised foundation design is required.

iii) Where possible drainage and underground service routes will be located beyond the RPA of all retained trees. Where any work is required within the RPA the principles set in NJUG 4 will be adopted. See attached notes

Phase 7 - Scaffolding

i) Pruning, as detailed in Phase 2, will be required to allow erection of scaffolding to enable reasonable construction of the buildings.

Phase 8 - Removal of Protection Barriers and Landscaping Works

i) A minimum of seven days notice will be given to the LPA prior to the dismantling of the protection barriers.

ii) All landscaping once the barriers have been removed will avoid soil re-grading and disturbance within the CEZ and no soil levels be altered after the protection barriers have been removed. Any hard landscaping within tree protection distances will conform to the principles set out in Phase 4.

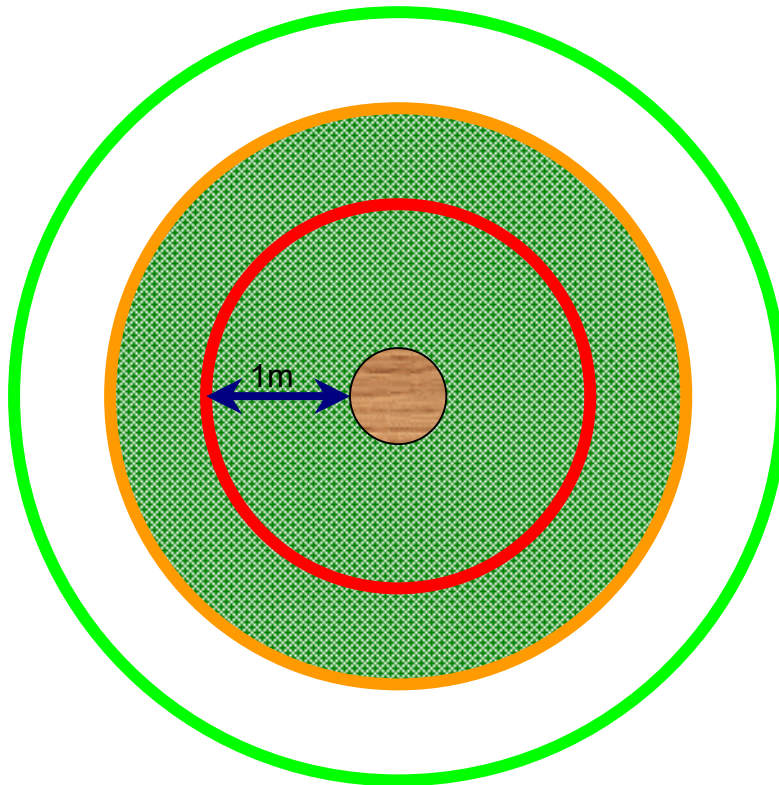
iii) Where fencing is required within the CEZ post holes must be dug by hand and be no more than 10% larger than the post. All spoil is to be distributed evenly around surrounding area to avoid a significant change in soil levels. Consideration must be given to planning of works with regards to post distribution and how this may be affected by tree locations, fencing should also be deviated as appropriate to avoid conflict with trees; usually allowing 500mm from the trunk of the tree to the nearest extent of the fence – to be advised by the project arboriculturist.

5.0 General Principles for Tree Protection

- i) A copy of this AMS and the attached TPP is to be retained on site at all times and all personnel associated with the construction process will be made familiar with the principles within.
- ii) If 360-degree excavators are to be used during construction, at no time is the excavating arm to encroach over the position of the protection barriers.
- iii) No fires are to be lit on site at any stage during the construction process.
- iv) A designated storage area is to be created away from retained trees. All materials for construction purposes are to be stored in this compound. Care must be taken to avoid the leakage or leaching of noxious materials into the soil.
- v) No materials will be stored or left stacked in positions around the site other than within the storage compound area.

6.0 Communication, Monitoring and Compliance

- i) In order to ensure that the principles of tree protection set out in the statement are adhered to, it is important to set out communication details for key individuals and tasks that require monitoring. These details should be retained by all relevant parties and available on site at all times. Relevant parties will be advised of any changes in personnel or contractor during the development process.
- ii) Before construction begins written confirmation that the developer/contractor or its agents agree to comply in full with the principles set out within this Method Statement will be lodged with the LPA.

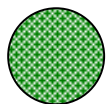


TREE PROTECTION ZONE

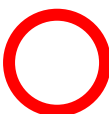
Key to Diagram



Trunk of Tree



Spread of canopy or branches



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - DO'S and DON'TS

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

Don't excavate within this zone.

Don't use any form of mechanical plant within this zone

Don't store materials, plant or equipment within this zone.

Don't move plant or vehicles within this zone.

Don't lean materials against, or chain plant to, the trunk.

Do contact the local authority tree officer or owner of the tree if excavation within this zone is unavoidable.

Do protect any exposed roots uncovered within this zone with dry sacking.

Do backfill with a suitable inert granular and top soil material mix as soon as possible on completion of works.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

Don't excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Don't repeatedly move / use heavy mechanical plant except on hard standing.

Don't store spoil or building material, including chemicals and fuels, within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PERMITTED ZONE

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Do use caution if it is absolutely necessary to operate mechanical plant within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.