Arboricultural Method Statement

Protected Status Of Trees

Trees may be legally protected, this may either be in the form of a Tree Preservation Order (TPO) or that the trees are located within a Conservation area. In addition some tree felling may require a felling licence from the Forestry Commission.

Potentially large penalties may be enforced for illegally carrying out works on protected trees. It is recommended that checks are made before any works are undertaken and no work should commence until permission has been granted. Please note that there are a number of exemptions from the requirement to obtain a felling licence including land on which full planning permission has been granted by the local authority, however this exemption does not cover land where only outline planning permission has been granted, or on land which has been allocated for residential development within local authority urban and local development plans.

There are restrictions protecting the trees on the site. The site is located within a Conservation Area and 6 weeks notice must be supplied to the Local Planning Authority for any proposed tree work not otherwise approved by any existing relevant planning permission. Furthermore, there are two Tree Preservation Orders (TPO) which protect the trees. A breakdown is provided in the below table. The quality of the maps supplied with the TPO are not of sufficient detail to accurately identify a number of the trees. Consequently, some of the cells in the below table have multiple references.

Species	AAT Reference	TPO No. 154 2007	TPO No. 22 1981	TPO 317
Sycamore	30	28	A2	-
Sycamore	31	-	A2	-
Sycamore	32	30	A2	-
Sycamore	39	31	A2	-
Sycamore	40	34	A2	-
Sycamore	43	33	A2	-
Sycamore	44	35	A2	-
Sycamore	47	36	A2	-
Sycamore	48	-	A2	-
Sycamore	50	-	-	5
Sycamore	59	-	-	2
Sycamore	66	-	24	-
Sycamore	68	-	23	-
Sycamore	70	-	20/21	-
Sycamore	71	-	20/21	-
Sycamore	72	-	20/21	-
Sycamore	73	-	17/18	-
Sycamore	74	-	16	-

Tree Works

The first arboricultural works on site will be the removal of all the conflicting trees (52-54, 57 & 63-65 and group 1) which are identified on the Tree Protection Plan (TPP) by the broken black ring surrounding the tree centre and referred to in appendix 1 of this report.

The stumps may either be ground out using a stump grinding machine or removed as part of the ground excavation works.

Facilitative pruning will be required to allow unimpeded access into the site and to ensure an acceptable clearance distance is established between any retained trees and built structures, footpaths, roads or services.

Trees that require facilitative pruning are:

- Group 7

Details of any further arboricultural works are included within Appendix 1 of this report. The tree works should wherever possible be carried out in accordance with BS3998:2010 Recommendations for tree work.

Protective Barrier Erection

The protective barriers are to be erected prior to the commencement of site works including demolition, soil stripping or movement, bringing onto site of materials, supplies or machinery. Tree works can be undertaken prior to the erection of the barriers.

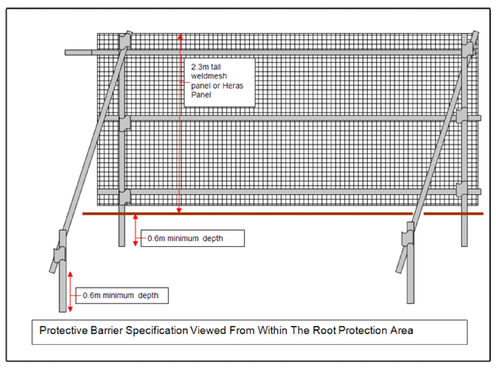
The barriers must be erected in the position indicated on the Tree Protection Plan (TPP) by the dark blue line and be constructed as per the following specification.

The barriers should be considered essential and should not be removed or altered without prior recommendation by an Arboriculturalist and approval of the local planning authority.

The barrier should consist of a vertical and horizontal framework of scaffold tubing which is adequately braced to resist impacts. The vertical scaffold tubes need to be placed at a distance not exceeding 3m apart and driven securely into the ground for a minimum depth of 0.6m. Care should be taken when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid any structural roots. The weldmesh or Heras panels need to be a minimum 2.0m tall and are securely attached to the scaffold framework with wire or scaffold clamps. The wire or scaffold clamps should be secured on the inside of the barrier to avoid easy dismantling. Panels on rubber or concrete feet are not resistant to impact and should not be used.

No fixing shall be made to any tree and all possible care must be taken to prevent damage to tree roots when locating the posts.

All types of barriers must be firmly attached to prevent movement by site personnel or vehicles and all weather signs with the wording “Construction exclusion zone- keep out” should be attached.



Protective Barrier Specification Viewed From Within The Root Protection Area

Ground Protection Areas & Erection Of Scaffolding Within The Trees Root Protection Areas

As discussed in the accompanying AIA, the extent of group protection required will depend upon the timing of operations. Group 5 will require ground protection regardless. Trees 32, 39-40, 43-44, 47, 66-72, 74, group 3 and group 7 may require ground protection if the existing surfacing cannot be retained until the end of the project.

To prevent damage occurring to the trees, the following technique should be observed. The areas requiring this protection are marked in hatched orange on the tree protection plan.

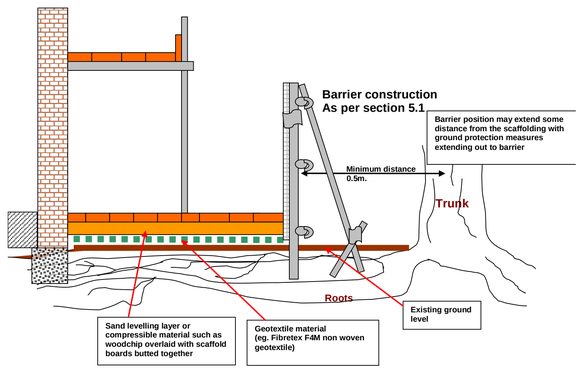
The following diagrams visualise the layout requirements. By sufficiently protecting the rootplate of the tree, the access or scaffolding and associated working area can be placed within the root protection area. There is no limitation as to the size of the ground protection area, but we would advise that it is at least 0.5m from the trunk of any tree.

A summary of the requirements for the erection of the scaffolding and working area are detailed below.

- Protective barriers should be erected onto a framework of scaffolding (as per the fencing drawing in section 5.1 to comply with the recommendations of BS 5837).
- The barrier is erected prior to the commencement of work at a suitable distance from the building to allow for the erection of the main scaffolding.
- A porous geotextile fabric should be laid onto the undisturbed ground surface and a layer of sand or compressible material such as woodchip applied to level the area.
- Boards should be laid onto the sand to protect the rootplate. Scaffold boards are usually adequate for pedestrian loads
- The boarding must remain until building works are completed.

As the building rises, additional scaffolding is erected within the area protected by the boards. The use of supplementary timber sole plates is advised.

Erection of scaffolding within the root protection area of the tree to BS 5837 (not to scale)

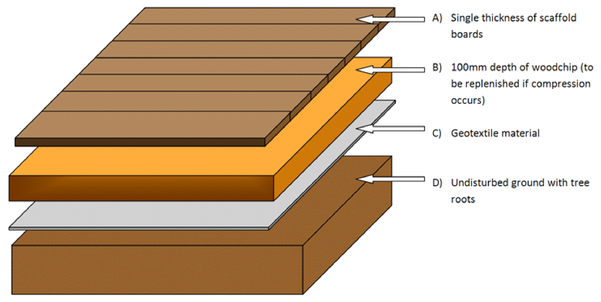


Temporary ground protection should be tailored to the likely load it will be subjected to. The following diagrams indicate the acceptable techniques for:

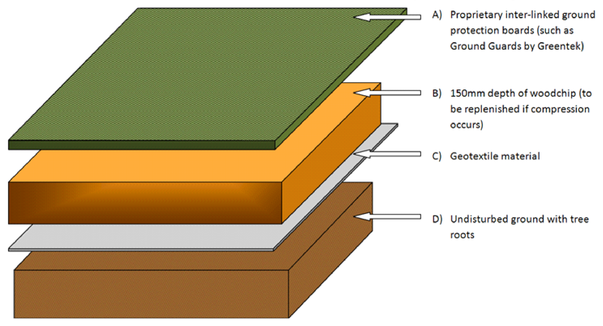
- Pedestrian
- Plant and vehicle access up to 2 tons gross weight
- Plant and vehicle access up exceeding 2 tons gross weight

It will be necessary to install ground protection measures as represented by figure 4 in the area indicated by the orange hatching on the attached plan.

Ground Protection Suitable For Pedestrian Movement Only



Ground Protection Suitable For Pedestrian Operated Plant Up To A Gross Weight of 2t



If the likely loading is to exceed 2t gross weight it will be necessary to produce an engineered solution with arboricultural advice to accommodate the likely load safely. One such example is shown below. In some cases it may be necessary to install a temporary road using a 3D cellular confinement system (such as Cellweb by Geosynthetics Ltd).

Suitable For Wheeled Or Tracked Construction Traffic Exceeding 2t Gross Weight

1) 50mm X 50mm X 500mm timber stakes
2) 200mm x 50mm timber rails
3) Geotextile membrane
4) Base layer of Ground Guards by Greentek
5) Wood chippings or other compressible material
6) Interlinked Ground Guard plates

Location of Site Compound & Storage Areas

The contractor's site compound, storage & parking areas must be located outside of the root protection areas (RPAs) of the retained trees.

All site storage areas, especially cement mixing and washing points for plant and vehicles must also be situated outside of the root protection areas (RPA). Where there is a possible risk of polluted water runoff heavy duty plastic sheeting and sand bags must be used to contain spillages and contamination.

Porous Surfacing

As discussed in the accompanying AIA, the use of a 3D cellular confinement system is not considered necessary. However the use of a porous final surface is encouraged.

Final surfacing options include;

O **Block paving or paving slabs -** The use of porous blocks such as 80mm Priora by Marshalls are particularly tree friendly and allow natural rainfall to reach the rooting area.

O **In-situ concrete -** in-situ concrete forms an impermeable surface though can be made permeable with by forming drainage holes (diameter 50mm) at regular intervals (between 300-600mm) and backfilling the resultant holes with no fines gravel or aggregate

O **Porous tarmac and resin bonded gravels -** many different products exist, some of which are permeable and some are not. Product specification must be consulted.

O **Loose Gravel**

O **Gravel infilled blocks -** Lay Turfpave sub-surface paving system and infill with gravel.

Drainage Runs/ Underground Services

It is assumed that the existing service runs will be exploited where possible, but if new works are required it is important that they comply with the National Joint Utilities Group (NJUG) 'Guidelines for the planning, installation, and maintenance of utility services in proximity to trees' and BS 5837:2012. The excavation of open trenches by machine will be unacceptable within the protective zone of any of the retained trees.

Wherever possible, services should be routed outside of any retained trees RPA. When this is not possible apparatus should be routed together in a common duct and any inspection chambers sited outside the RPA.

Acceptable techniques for the laying of services in order of preference are:

- **Trenchless-** by use of thrust boring or similar techniques. The pit excavations for starting and receiving the machinery should be located outside of the root protection area. To avoid root damage, the mole should run at a depth of at least 600mm.
  Use of external lubricants on the mole other than water (eg oil or bentinite) should be avoided.

Trenchless Solutions For Installation Of Underground Services

Method	Accuracy (MM)	Bore (A) diameter (MM)	Maximum subterranean length (M)	Applications	Not suitable for
Microtunnelling	<20	100 to 300	40	Gravity-fall pipes, deep apparatus, watercourse/ roadway under crossings	Low-cost projects due to relative expense
Surface-launched directional drilling	≈100	25 to 1200	150	Pressure popes, cables including fibre optic	Gravity fall pipes, e.g. drains and sewers (B)
Pipe ramming	≈150	150 to 2000	70	Any large-bore pipes and ducts	Rocky and other heavily obstructed soils
Impact moling (C)	≈50 (D)	30 to 180 (E)	40	Gas, water and cable connections, e.g. from street to property	Any application that requires accuracy over distances in excess of 5m.

(A) Dependant upon strata encountered
(B) Pit-launched directional drilling can be used for gravity fall pipes up to 20m in subterranean length
(C) Impact moling (also known as thrust-bore) generally requires soft, cohesive soils.
(D) Substantial inverse relationship between accuracy and distance
(E) Figures given relate to single pass: up to 300mm bore achievable with multiple passes

If trenchless insertion is not feasible the alternatives are detailed below in order of preference.

- **Broken trench-** by using hand dug trench sections together with trenchless techniques. It should be limited to practical access and installation around or below the roots. The trench must be dug by hand (see following comments re continuous trenching) and only be long enough to allow access for linking to the next section. The open sections should be kept as short as possible.
- **Continuous trench-** the trench is excavated by hand and retains as many roots as possible. The surface layer is removed carefully and hand digging of the trench takes place. No roots over 2.5cm diameter or clumps of smaller roots (including fibrous) should be severed. The bark surrounding the roots must be maintained. Cutting of roots over 2.5cm diameter should not be attempted without the advice of a qualified Arboriculturalist.

  If roots have to be cut, a sharp tool (defined as spade, narrow spade, fork, breaker bar, secateurs, handsaw, post hole shoveller, hand trowel) should be used.

Backfilling

Reinstatement of street works must comply with the code of practice New Roads and Streetworks Act 1991 (Specification for the reinstatement of openings in highways), but where tree roots are involved backfilling should be carefully carried out to avoid direct damage to retained roots and excessive compaction of the soil around them.

The backfill should incorporate an inert granular material mixed with top soil or sharp sand (not builders sand) around the retained roots. This will allow a measure of compaction for resurfacing whilst creating an aerated zone around the roots.

Roots and in particular fine roots, are vulnerable to desiccation on exposure to air. The roots are at greatest risk when there are rapid fluctuations in the air temperature around them (especially winter diurnal temperatures). It is vitally important that the roots are covered with sacking whilst the trench is open. The sacking should be removed once the trench is backfilled.

Arboricultural Supervision

The following programme of supervision is proposed to assist is the preservation and protection of the retained trees during all aspects of the proposed development.

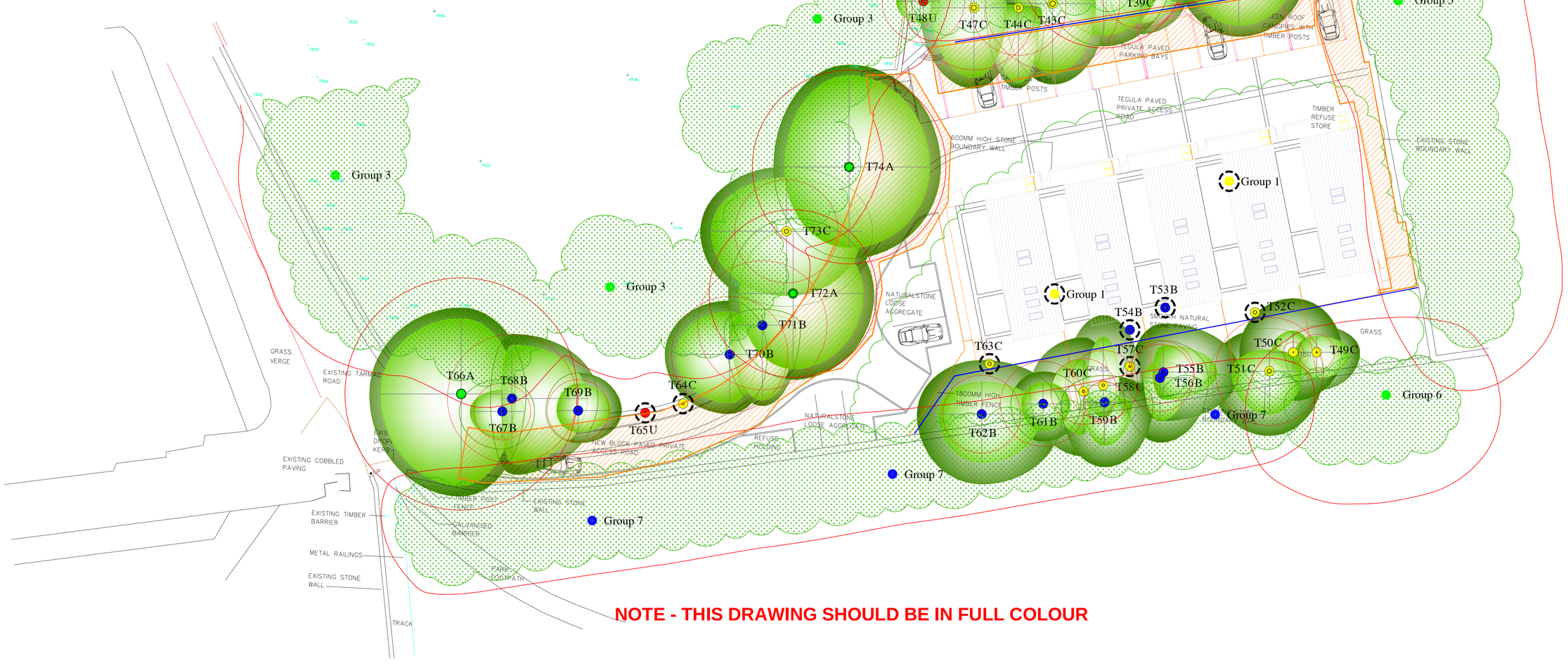
The supervision arrangements must be sufficiently flexible to allow for the supervision of all sensitive works as they occur. The Arboricultural Consultant's initial role is to liaise with the developer and the council to ensure that the appropriate protective measures are in place before any works commence on site and once the site is active monitor compliance with the Arboricultural conditions and advise on any tree problems that may arise.

Action	Programming	Extent of supervision	Nature of supervision
Pre-commencement meeting with site manager & Council tree officer	Before any site activity commences	Meeting on site Review any updates to the proposal Confirm extent of tree works and protective barrier position.	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works meeting with tree works contractor	Prior to commencement of tree works	Meeting on site to confirm tree works specification and method of working	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Tree works undertaken Finalising tree protection barrier installation and other tree protection measures	Before any plant enters site or demolition/construction work commences.	Confirm position of the protective barriers and any other tree protection measures have been installed and comply with the Tree Protection Plan (TPP) Provide photographs indicating completed tree protection	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Installation of services within root protection areas	Prior to installation of surfacing or services & during installation of surfaces and services	Meeting with contractor prior to installation and during installation of surfacing and services to ensure compliance with AIA	Site meeting & letter or email confirming results of meeting distributed to relevant parties.
Removal of protective barriers and other tree protection measures	Once construction activities have finished	Meeting with contractor for briefing before removal commences	Site meeting & letter or email confirming results of meeting distributed to relevant parties.

Site Management

It is the developer's responsibility to ensure that the details of the Arboricultural method statement and any agreed amendments are known and understood by all relevant site personnel. Copies of the agreed documents must be kept on site at all times and the site manager or other appropriate person must brief all personnel who could impact the trees on the specific tree protection requirements.

This should form part of the site induction procedure and be written into the appropriate site management documents.



Key:

- Tree Number
- Tree Crown Tree Shape (Shaded Light Green)
- Predicted Future Growth Of Canopy (Shaded Dark Green & Surrounding Current Crown Shape)
- Trees To Be Removed Broken Black Ring Surrounding Centre
- Tree Quality Assessment Centre Colours As Below
- Green Centre = High Quality (Denoted By Letter A)
- Blue Centre = Moderate Quality (Denoted By Letter B)
- Yellow Centre = Low Quality (Denoted By Letter C)
- Red Centre = Unsuitable To Retain (Denoted By Letter U)
- BS Root Protection Aera As Shown By The Red Circle Around The Tree
- Tree / Woodland Groups
- Hedgerows
- Ground Protection Required (Areas Indicated By Orange Hatching)
- Position Of Protective Barrier (Continuous Blue Line)

Institute of Chartered Foresters
Registered Consultant

Revised Arboricultural Method Statement
Tree Protection Plan (AMS TPP)
Revision E
Retained Trees Shown On Proposed Layout With Protective Measures Indicated

Land At Church Lane,

Whitburn

For

Fitz Architects Ltd

AllAboutTrees Ltd
Arboricultural & Ecological Consulting
Chartered Arboriculturalists & Environmentalists
The Old School, Quarry Lane, Butterknowle, Co. Durham, DL13 5LN
Tel 0191 3739494 01388 529200
email info@allaboutrees.co.uk www.allaboutrees.co.uk

Drawn at Durham Office By TA Checked by AW

Scale 1:200 at A0 Date 19.03.15

-Registered Chartered
-Arboricultural Consultants
-Planning & Development
-Urban Forestry
-Ecological Consultants

Drawing no AMS TPP-Rev E.

NOTE - THIS DRAWING SHOULD BE IN FULL COLOUR