

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 felling 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.

AllAboutTrees has been able to ascertain with Durham County Council (the Local Planning Authority) on Thursday 6th May 2021 that there are no restrictions protecting the trees on the site. The site is not within a conservation area and there are no TPOs imposed on any trees within the site.

Tree Works

The first arboricultural works on site will be the removal of all the conflicting vegetation:

- Tree 6,
- Hedge 1 & 2 &
- Section of 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 hedges, and section of group 1, to be removed have had the coloured infill hatch, and RPA removed. The broken black ring has been placed around the coloured categorisation circle adjacent to hedge / group label.

The stumps may either be removed using a stump grinding machine or removed as part of the ground excavation works if not situated within the root protection area of trees to be retained.

Details of any prescribed pruning works are included within Appendix 1 of this report. The tree works should wherever possible be carried out in accordance with BS3998:2010 Tree Work - Recommendations.

Wildlife Habitats

Consideration must be given to wildlife when conducting tree works, particularly birds and bats.

Bats

All UK bats and their roosts are protected by law. The legislation protecting bats are:

- The Wildlife and Countryside Act 1981 (WCA)
- Conservation of Habitats and Species Regulations 2017

For all countries of the UK, the legal protection for bats and their roosts may be summarised as follows:

You will be committing a criminal offence if you:

1. Deliberately capture, injure or kill a bat
2. Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
3. Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
4. Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
5. Intentionally or recklessly obstruct access to a bat roost

'In a court, 'deliberately' will probably be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequences of their action (see most likely here).

Penalties on conviction - the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

No visual signs were found to indicate the presence of bats in the surveyed trees.

When carrying out tree works it is essential that the contractor or other competent person carries out a specific bats in trees risk assessment which can be obtained from the Arboricultural Association or the Bat Conservation Trust (BCT). If evidence of bats is found work must stop immediately and Natural England Batline contacted (0845 1300 228). A further inspection may well be required by a licensed bat handler or roost visitor.

Birds

In the UK, all wild birds, their nests and their eggs are protected by law.

In England, Scotland and Wales the legislation that protects wild birds is:

- The Wildlife and Countryside Act 1981
- The Countryside (or CROW) Act 2000

No nesting birds were present at the time of inspection though given the scope of the site and, the extent of vegetation, potential exists for birds to nest and as such caution must be exercised.

As with bats the contractor has an obligation to carry out visual checks prior to works. Where possible tree works should be carried out in the period from August to the end of February in order to avoid the bird nesting season.

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 should be undertaken prior to the erection of the barriers.

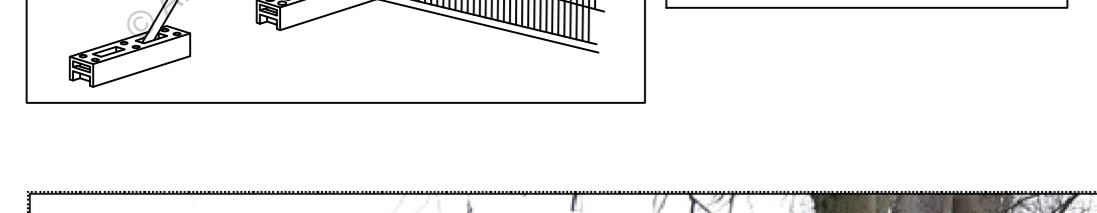
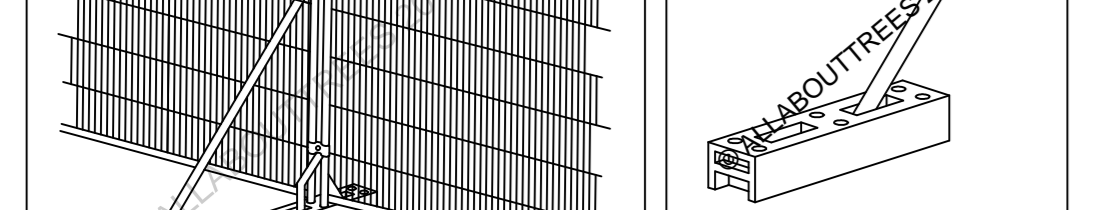
The barriers must be erected in the position indicated on the Tree Protection Plan (TPP) by the dark blue line and be constructed as per the following specification.

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 proprietary 2m tall welded mesh panels mounted on rubber or concrete feet. The panels must be joined together with a minimum of two anti-climb couplings situated at least 1m vertically apart and installed uniformly throughout the barrier so that they can only be removed from inside the barrier. The panels must be supported on the inner side by stabilising struts mounted on a block fixity.

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.



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

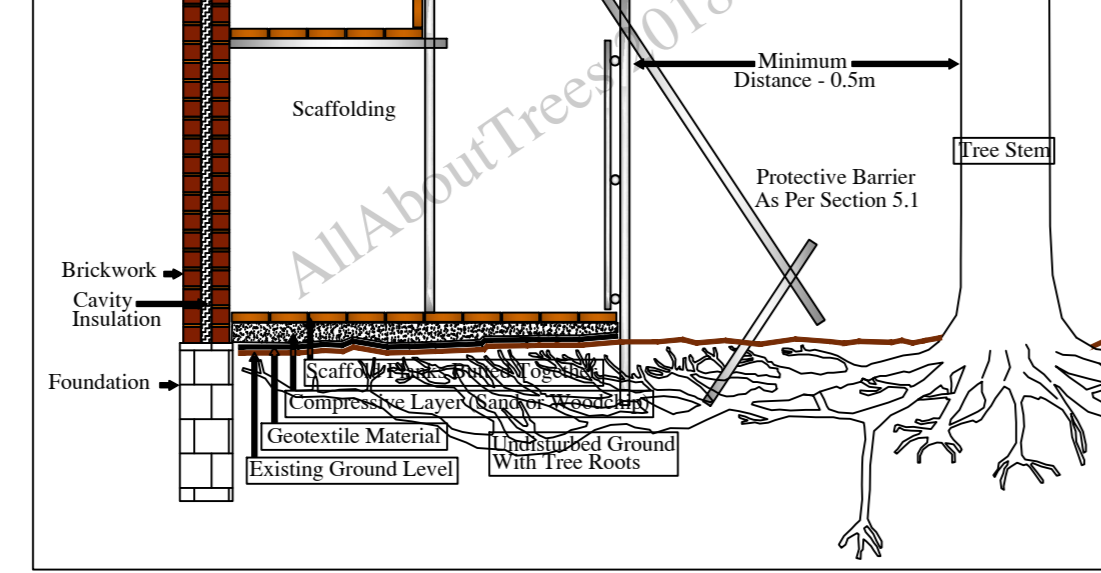
In some cases (adjacent to trees 2 and 7) it will be necessary to provide access within the root protection areas of the trees, or to create space for scaffolding and working areas. To prevent damage occurring to the trees, the following technique should be observed. The areas requiring this protection 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 pedestrian 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 the Arboricultural Method Statement) 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.

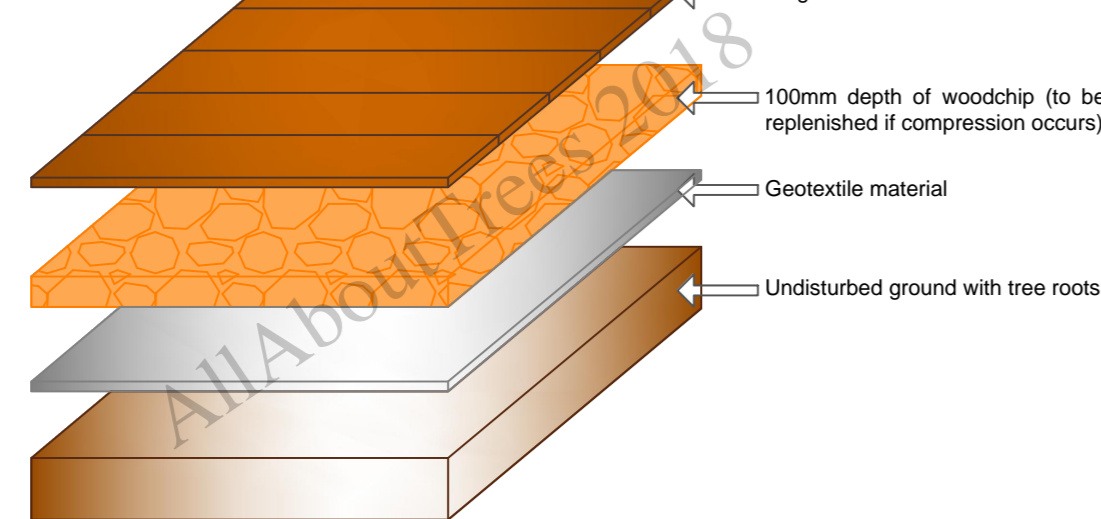
As the building rises, additional scaffolding is erected within the area protected by the boards. The use of supplementary timber sole plating is advised.



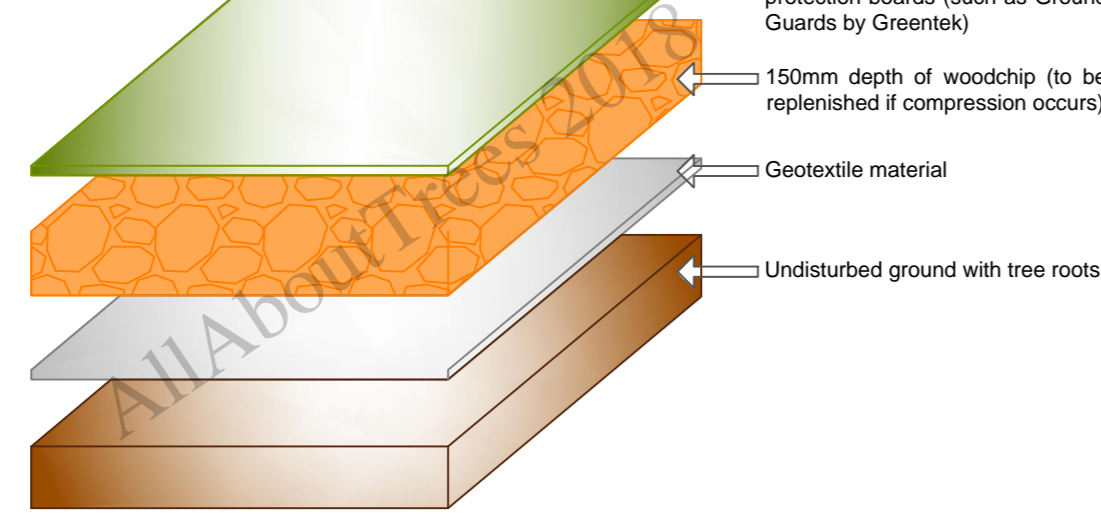
Temporary ground protection should be tailored to the likely load it will be subjected to. The following diagrams indicate the acceptable techniques for:

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

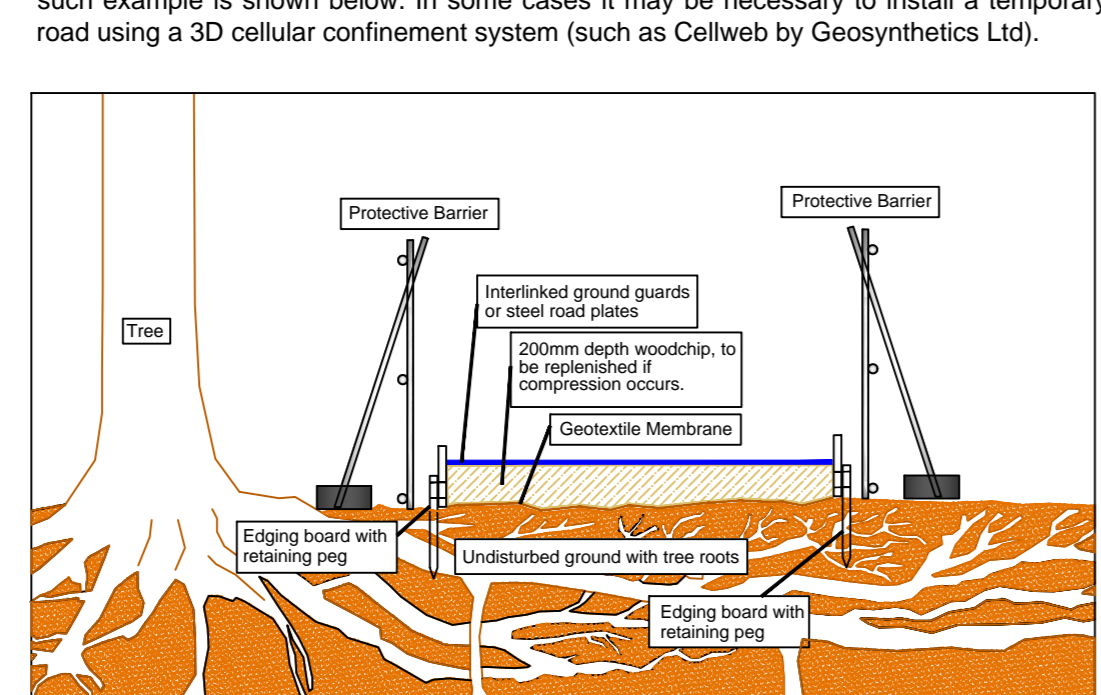
Ground Protection Suitable For Pedestrian Movement Only



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).



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. This includes any trees which are located outside of the study area but not included within the survey.

All site storage areas, especially cement mixing and washing points for plant and vehicles must also be situated outside of the root protection areas (RPAs). 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.

Demolition
The demolition work near the trees must be undertaken with great care with every effort made to avoid damage to aerial and underground portions of the tree. Roots frequently grow adjacent to, and underneath structures and surfacing and damage can occur when the roots are physically disturbed or the soil around them is compacted from the weight of machinery or material.

When demolishing structures near to trees the machine should ideally break the walls and roof into the footprint of the building (to slow outback methodology) and avoid any debris falling into the root protection area.

If this is not possible the section of the building adjacent to the tree will need to be demolished by hand.

Existing surfacing should be carefully lifted using either a long reach machine positioned outside of the root protection area or manually using hand tools. Surfacing is broadly defined as any hard surfacing used for vehicular access, parking or pedestrian pathways. Including tarmac, crushed stone, solid stone, compacted aggregate, concrete and timber decking, but excluding compacted soil with no hard covering.

In summary:

- Machines with long reach may be positioned outside of the root protection area (RPA) and used to demolish the building or carefully remove debris providing this does not disturb the RPA or the aerial portion of the tree
- Appropriate hand tools for manual removing debris include pneumatic or powered breaker, sledgehammer, crow or prying bar, pick, mattock, spade, shovel, trowel, fork or wheelbarrow. Saws and hand saw should be available to cut any exposed roots. The debris must be moved across existing hard surfacing or temporary ground protection thereby avoiding compaction of the soil.
- If appropriate the below ground structures should be left in place if their removal was to cause excessive root disturbance.

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 zones of any of the retained trees.

Whenever possible, services should be routed outside of any retained tree 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 500mm.
- Use of external lubricants on the mole other than water (eg oil or bentonite) should be avoided.

Method	Trenchless Solutions For Installation Of Underground Services	Accuracy (MM)	Bore (A) diameter (MM)	Maximum subterranean length (M)	Applications	Not suitable for
Microtunneling		<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 pipes, cables including fire optic	Gravily fall pipes, e.g. drains and sewers (B)
Pipe ramming		150	150 to 2000	70	Any large-bore pipes and ducts	Rocky and heavily obstructed soils
Impact moling (C)		50 (B)	30 to 180 (B)	40	Gas, water and cable connectors, e.g. from street to property	Any application cables connectors, accuracy over distance of excess of 5m.

- (A) Dependent 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 in 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, hand saw, post hole shoveller, hand trowel) should be used.

Backfilling

Reinstatement of street works must comply with the code of practice New Roads and Streetsworks 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/durnal 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 in the preservation and protection of the retained trees during all aspects of the proposed development.

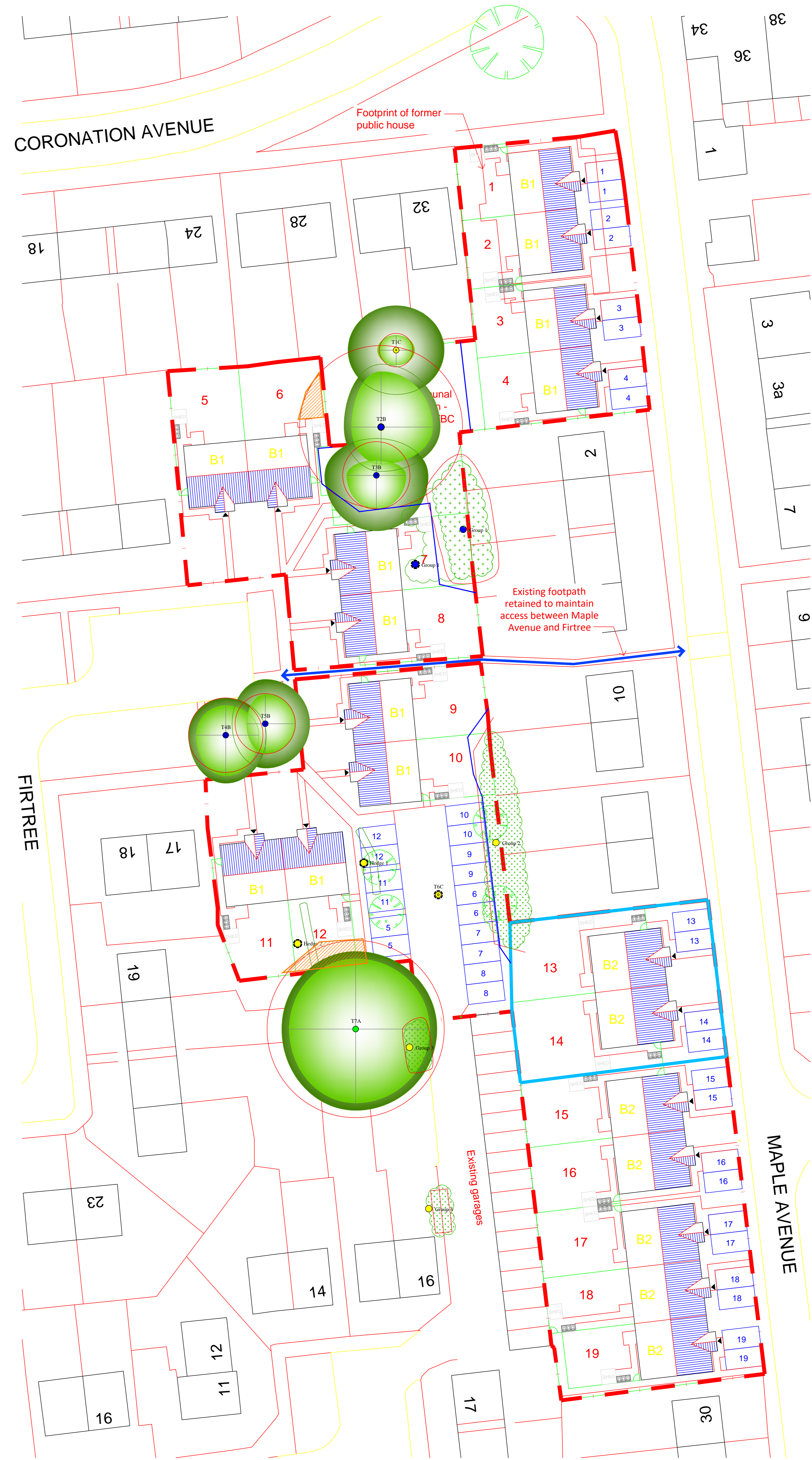
The supervision arrangements must be sufficiently flexible to allow for the supervision of all sensitive works as they occur. The Arboricultural Consultant's initial role is to liaise with the developer and the council to ensure that the appropriate protective measures are in place before any works commence 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	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	Review any updates to the proposal	Site meeting & letter or email confirming results of meeting distributed to relevant parties
Tree works undertaken	Before any plant enters site or demolition/ construction work commences	Confirm extent of tree works and protective barrier position	Site meeting & letter or email confirming results of meeting distributed to relevant parties
Installation of services within root protection areas (if required)	Prior to installation of surfacing or services & during installation of surfacing and services to ensure compliance with Act	Provide photographs indicating completed tree protection	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.



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Key:

- Tree Number
- Tree Crown True 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 Area As Shown By The Red Circle Around The Tree
- Tree / Woodland Groups Root Protection Area Shown By Red Outline Surrounding Group
- Removed Tree / Woodland Group Hatch Fill And Root Protection Area Removed
- Hedges / Root Protection Area Shown By Red Outline Surrounding Hedge
- Removed Hedges / Root Protection Area Removed
- Position Of Protective Barrier (Continuous Blue Line)
- Ground Protection Required (Areas Indicated By Orange Hatching)

Institute of Chartered Foresters Registered Consultant

Arboricultural Method Statement Tree Protection Plan (AMS TPP)

Retained Trees Shown On Proposed Layout With Protective Measures Indicated

Land At Maple Avenue, Shildon For Livin

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Chartered Arboriculturalist & Environmentalists

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

Drawing Ref. Revision
AMS TPP -