

Tree Protection

Protective Fencing/Protective Barrier
 Details of the fencing are shown in the appendices to this report and comply with British Standard recommendations. All weather notices are to be affixed to this fencing with signage "CONSTRUCTION EXCLUSION ZONE - NO ACCESS".

Ground Protection

In the vicinity of the temporary unit working space will mainly be confined to existing hard surfacing. Where additional working space is required for construction within the root protection areas of retained trees, the British Standard specifies the following type of ground protection.

- a) For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geo-textile membrane.
- b) For pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geo-textile membrane;
- c) For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

Storage of contaminants and mixing of concrete

This must be carried out outside the root protection areas of all trees. The ground should be protected with heavy duty plastic sheeting, e.g. 1200 gauge DPM, with edges secured and raised to prevent spillage and with a raised lip along the access point.

Methods of Construction for the Development

Hand dig
 Hand digging will also be required for all works within root protection areas of trees, including removal of surfacing, trenches, excavation for fence post and for cultivation for soft landscape areas. All hand digging within the root protection areas of trees should be supervised by a competent arboriculturalist.
 Within root protection areas all excavation should be hand dug. A trench should be hand dug near the trees to ascertain whether roots are present. If roots over 50mm are found these should, where possible, be bridged, and surrounded by sand- roots under this dimension should be cut to a clean cut and surrounded by sand. No roots are to be left exposed but covered with damp sand or hessian. The surface level of the path may need to be adjusted to retain these roots.

If on investigation of the hand dug trench there are no roots present mechanical excavation may be possible if a banksman is supervising the excavation to ensure that if roots are unearthed they can be protected and clean cut and surrounded by sand. Hand digging may need to be resumed to complete the excavation.
 This would include exploratory excavation by hand for the foundations of the paths and new hard surfacing within the root protection area of the trees.

Surfacing within the Root Protection Area

Minimizing excavation within the root protection area by removing surfacing herbage and laying a geo-textile to stabilize the ground.

- a) Infill any irregularities with 50mm sharp sand
- b) On this lay a geo web, depth to be specified by the supplier to accommodate the proposed weight load.
- c) This will be filled with no fines gravel / stone 20-40mm
- d) Lay final wearing surface on top of this base- for example permeable paving or porous tarmac.
- e) Use timber edging to avoid excessive excavation to facilitate haunching of edging.

Location of Underground Services

All drainage and below ground services will be designed to avoid tree protection zones. If there is no alternative but to site these within the root protection area of trees, then trenches excavation should be hand dug and comply with 'Hand dug' as outlined in section 5.1 or the NJUG regulations

Remedial works and soil improvement

This will be application within the footprint of the outbuilding to be demolished. Exposed soils are easily compacted resulting in loss of water and gaseous exchange and leading to root deaths. To relieve ground compaction, which may have resulted from the overrun of vehicles or by storage of materials, the clay soils should be broken up to allow air to penetrate and for the soil structure to be restored.

Within the tree root protection area improve the soil structure by incorporating a compost or mulch within the topsoil, of 75-100mm in depth. This can be spread over the surface and gently forked into the soil. If bark chip is used as a mulch NPK fertilizer should be added to counteract the nitrogen depletion of the soil. There are options for additives of mycorrhizal fungal which may also improve root function. Ground compaction will be addressed by either lightly forking over the area or by other techniques; for example use of tree spade soil aeration.

Arboricultural method

Pre construction

1. Carry out tree removal and tree surgery and listed
2. Fence off all trees to be retained prior to demolition and site work
3. Provide and insert ground protection for the duration of construction works if required
4. Carry out demolition and site clearance
5. Set up site working area

Construction

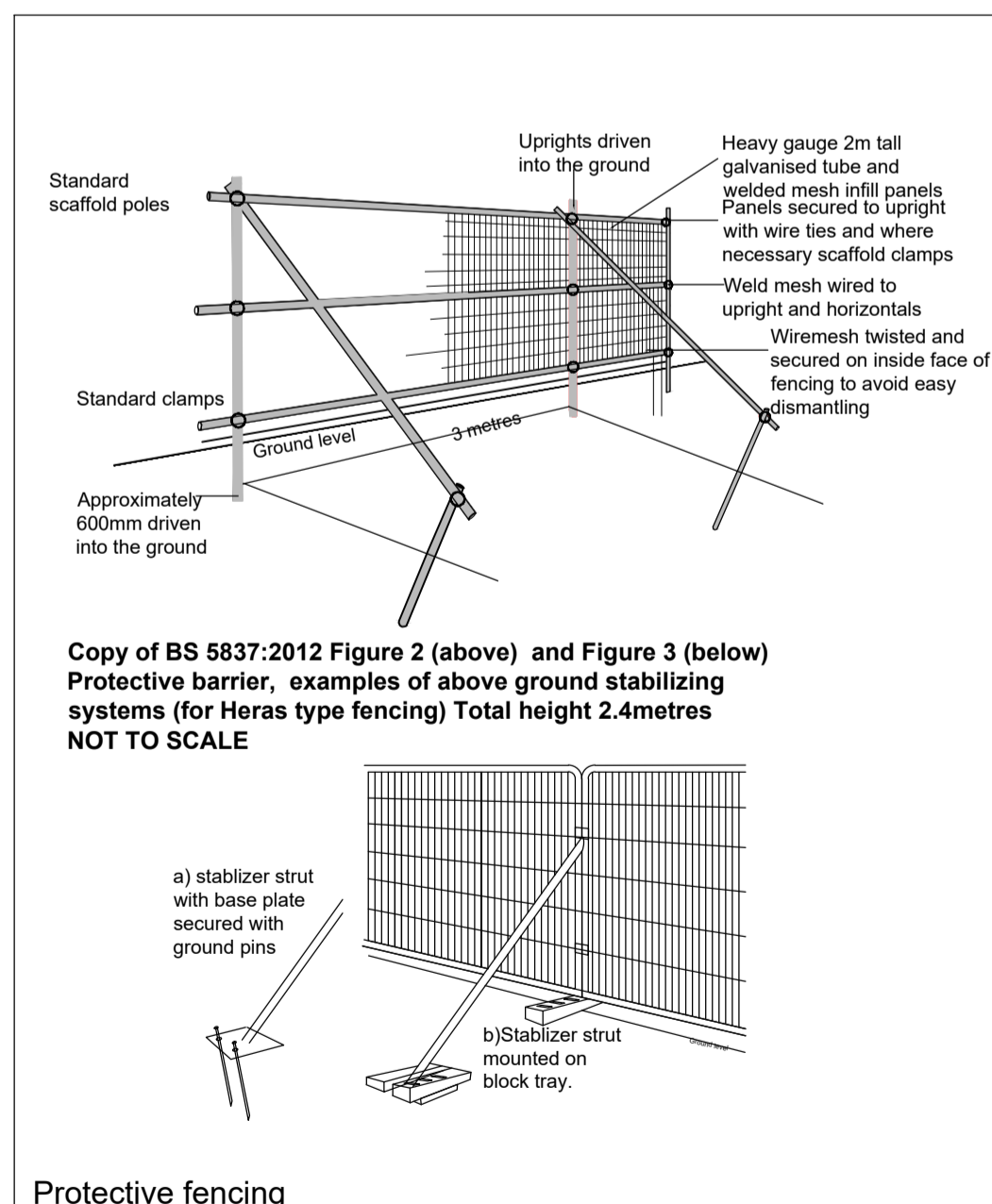
6. Carry out construction- Hand dig for foundation within the RPA of trees
7. For new drain run as marked hand dig all within RPA of trees.
8. For new surfacing insert ground protection as above for use of site works

Post completion

9. On completion of works remove protective fencing and ground protection
10. Carry out remedial works as listed prior to landscape works
11. Carry out landscape works

SCHEDULE

- A Quality trees
- B Quality trees
- C Quality trees.
- U Quality trees
- Root Protection Areas (RPA)
- Hedges
- Vegetation not surveyed to retain
- Trees to remove
- Protective fencing
- HAND DIG for foundations
- Minimize and hand dig for excavations with RPA of trees



Tag	Tree	#	Age	Form	Height	DBH	Health	Location	Category	Notes	Structure	Physiology	Notes	Recommendations	Site	R	P	A	
0	Hybrid Poplar Populus x canadensis	M	750	1	18-20	18	16	C2	1-2	1-2	1-2	Fair	Fair	Pollard at 6m with limited re-growth, part of TPO woodland	less	10	20	9	
T1	Sycamore Acer pseudoplatanus	M	240, 220	2	10	3	3	U	4,6	4,5	2	4,4	Poor	Fair	Wire ingraned. 1 sided crown. Poor quality trees	REMOVE	less	10	
T2	Sycamore Acer pseudoplatanus	M	165	2	7.5	0	0	U	2,4	2,2	2,3	0,5	Poor	Poor	W fence. 1 stem fallen. Stem severed. Large pruning wounds.	REMOVE	less	10	
T3	Sycamore Acer pseudoplatanus	M	250	2	10	2,5	2,5	C2	3,5	2,7	2,6	3,4	Fair	Fair	Self set. Rooted outside the site, trunk close to the palisade fence	REMOVE	10	20	3
T4	Sycamore Acer pseudoplatanus	M	220, 330, 275	3	11,3	3	3	C2	4	4,2	5	2,8	Fair	Fair	Proflig ivy ascending the crown outside the site with crown overhanging	Crown lift to 5 metres over the site and face back to provide 2 metre clearance from the building	10	20	4
T5	Lombardy Poplar Populus nigra 'Italica'	M	950	1	22	3	3	B2	2,8	3,1	2	3	Fair	Fair	outside site, basal growth ivy ascending the crown	Crown lift to 5 metres over the site and face back to provide 2 metre clearance from the building	20	40	11
T6	Jacques Birch Betula ulia 'Jacquemontii'	SM	60, 65, 55	3	6,7	2	2	B2	0,7	3	1,8	2	Fair	Fair	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T7	Jacques Birch Betula ulia 'Jacquemontii'	SM	65, 50, 80	3	6,7	2	2	B2	0,7	2,5	2	2,5	Fair	Fair	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T8	Jacques Birch Betula ulia 'Jacquemontii'	SM	235	3	11	0	0	B2	0,5	0,5	0,5	0,5	Good	Good	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T9	Jacques Birch Betula ulia 'Jacquemontii'	SM	80, 50	3	8	2	2	B2	2,6	1	2,1	2,5	Fair	Fair	Multi-stem trees- exposed and damaged roots	Crown lift if required over hard surfacing	20	40	2
T10	Jacques Birch Betula ulia 'Jacquemontii'	SM	90, 85, 112	2	8	2	2	B2	2	1,8	2,2	2,6	Fair	Fair	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T11	Jacques Birch Betula ulia 'Jacquemontii'	SM	90, 73, 60, 40	3	7	2	2	B2	2,2	1,6	2	2,7	Fair	Good	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T12	Jacques Birch Betula ulia 'Jacquemontii'	SM	80, 80, 70, 45	4	7	1,75	2	B2	1,7	2,5	1,7	2,4	Fair	Good	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T13	Jacques Birch Betula ulia 'Jacquemontii'	SM	70, 60, 60	3	6	1,75	2	B2	2,3	1,5	1,8	2	Fair	Good	Multi-stem trees	Crown lift if required over hard surfacing	20	40	2
T14	Hawthorn Crataegus monogyna	M	300	1	7,8	2	2	B2	5	3	2	4,1	Fair	Fair	leanign tree within TPO woodland		20	40	2

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Revision A corrected numbering and add additional tree surgery
 Date 15 May 2018

Scheme
37 Broadwater Road, Welwyn

Title
Tree Protection Plan

Scale
1:200 @ A1 Construction drawings not to scale

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