

Tree Protection Area KEEP OUT

Do **not** move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS
AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL
PROSECUTION.

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN
PERMISSION OF THE LOCAL PLANNING AUTHORITY

ARBTECH
Consulting Limited

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Tree Work Schedule			
No.	Species	Works	Category
10	Yew	Fell to ground level; grind out stump	B1
11	Elder	Fell to ground level; grind out stump	C1
12 (G3)	Sycamore	Fell to ground level; grind out stump	B1
13 (G3)	Sycamore	Fell to ground level; grind out stump	B1
14 (G3)	Sycamore	Fell to ground level; grind out stump	C1
36	Prunus sp.	Fell to ground level; grind out stump	B1
37	Prunus sp.	Fell to ground level; grind out stump	B1
38	Swedish whitebeam	Fell to ground level; grind out stump	B1
39	Prunus sp.	Fell to ground level; grind out stump	C1
40	Norway maple	Fell to ground level; grind out stump	B1
41	Norway maple	Fell to ground level; grind out stump	B1
42	Norway maple	Fell to ground level; grind out stump	B1
43	Norway maple	Fell to ground level; grind out stump	B1
45	Lime	Fell to ground level; grind out stump	B1
46	Lime	Fell to ground level; grind out stump	B1
G2	Sycamore	Fell to ground level; grind out stumps	C1
G3	Sycamore	Partial removal - Fell to ground level; grind out stumps	B1
G6	Various	Fell to ground level; grind out stumps	C1
G7	Various	Fell to ground level; grind out stumps	C1
G8	Silver birch	Fell to ground level; grind out stumps	B1
G9	Various	Fell to ground level; grind out stumps	C1
G10	Various	Fell to ground level; grind out stumps	C1

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations.
All arisings are to be removed and the site is to be left as found.
Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

Note: Foundations of the proposed walls situated within the footprint of the existing footpath are to be situated no deeper than the existing sub-base and foundations for the proposed walls situated outside of the footprint of the existing footpath are to be situated above the existing ground level. The only exception to this is for any piles or pads that may be required. Foundations of all structures are to be designed in conjunction with site investigations and arboricultural advice.

All landscaping within the protection zones are to be completed upon the removal of the protective barriers; appropriate trunk protection and ground boarding id to be installed prior to the undertaking of any works within these areas.

Sheet piling or similar retaining system. Prior to the installation of the retaining system the area where it is to be installed is to be manually excavated under arboricultural supervision.

Note: Tree no.9 was removed by others in June 2014.

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Note: Proposed hard landscaping features to be situated no closer than the existing; all foundations are to be situated no deeper than any existing foundations or sub-bases. Foundations of all structures are to be designed in conjunction with site investigations and arboricultural advice.

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction.
Default specification: To comprise either 2.4m wooden site hoarding; or a 2.3m high scaffolding framework comprising of vertical and horizontal framework, wall braced to resist impacts, with uprights to be spaced at a maximum of 3.0m intervals and driven into the ground by a minimum of 600mm. On to this, standard anti-climb welded mesh panels are to be securely fixed to each other with at least two scaffold clamps and to the scaffold framework with wire.
Secondary Specification: To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-lamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate and secured with ground pins.
All weather notices should be erected at regular intervals on the weld mesh panels with words such as 'Construction exclusion zone - Keep out'.

Trunk Protection

Protective trunk Wrapping:
To be attached to the trunks of retained trees prior to the commencement of all works on site, and retained in place throughout construction. To comprise of a minimum of three wrappings of clean dry hessian around the trunk from ground level up to 2.3m high and held in place using sisal. Onto the hessian a minimum of three wraps of chestnut pailing and is to be held in place by 2.50mm mild steel galvanized wire in three locations and fixed into place using fencing staples fixed into the chestnut pailing.
Protective hoarding:
To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise of 2.4m wooden site hoarding constructed upon a timber frame work situated around the outside of the planting pit. Where the timber frame is constructed around the tree trunk a minimum of 4 layers of clean dry hessian is to be wrapped around the trunk to protect the bark.
All weather notices should be erected at regular intervals on the weld mesh panels with words such as 'Construction exclusion zone - Keep out'.

Ground boarding

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Note The ground protection might comprise one of the following:

- for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
- for pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer(e.g.150mm depth of woodchip), laid onto a geotextile membrane;
- for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary system 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.

Hard Surfacing Removal

Removal of and or replacement of hard surfacing situated either partially or completely within the RPAs of retained trees shall be undertaken with care and under the direct on-site arboricultural supervision as these areas are likely to contain roots. Where this is necessary the wearing course will be broken up using a hand held pneumatic breaker, hand tools and a wheel barrow to break up and remove the surfacing. If it is necessary to remove the sub base this is to be undertaken using hand tools such as a fork to loosen the material and removed using shovels and wheels barrows. In some situations and at the discretion of the arborist it may be possible to use an excavator using a hydraulic breaker and suitably sized toothless grading bucket. If an excavator is to be used it must be situated outside of the RPAs, on top of the hard surfacing working away from the RPAs or from ground boarding. Which ever system is used the is to be **NO** disturbance of the soil beneath. If roots are found they are to be covered over with damp hessian and a layer of either sharp sand, wood chip or top soil to prevent desiccation.

Manual Excavation

Excavation within the RPAs will be initially undertaken by hand under direct on-site arboricultural supervision to a minimum of 750mm deep of any excavation, whether for proposed foundations, hard surfacing or underground services. The soil is to be loosened with the use of a fork or pick and then cleared with the aid of an air-spade and air-vac. All roots to be cut will be cleanly severed with the use of a hand saw or secateurs. The edge of the excavation closest to the retained trees will be covered over with damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination by concrete. If appropriate soil beneath the depth 750mm may be sheet piled, regular piled or individual piles. Any deeper excavations may be undertaken by a machine provided it works form outside of the RPA or has appropriate ground protection in place to move and work upon.

Foundations within RPAs

The use of traditional strip foundations can result in excessive root loss and as such should be avoided.

Designs for foundations that would minimize the adverse impact upon trees soil include particular attention to the existing levels, proposed finished levels and cross sectional details. Site specific and specialist advice should be sought from the project engineers and arboriculturist.

Root damage can be minimized by using:

- Piles with site investigation used to be determined their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600mm;
- Beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

Where a slab for minor structures (e.g. shed base) is to be formed within the RPA, it should bear on the existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface. In such cases, a specialist irrigation system should be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take into account of the effect on the load bearing properties of the underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from building control authority prior to this approach being relied upon.

Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for ground boarding. Use of the smallest practice piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored piles or screw piles.

This information is compiled with British Standard BS5837:2012 Trees in relation to design demolition and construction - Recommendations, section 7.5 Special engineering for foundations within the RPA.

Arboricultural Supervision

The arboricultural consultant will be required to attend site to directly supervise all demolition and construction works that have to be undertaken within the root protection areas. This will include:

- Pre-commencement site meeting.
- Location of protective measures.
- Manual excavation of retaining systems and foundations within RPAs of retained trees.
- Any excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services.
- Removal of protective measures.

Arboricultural Method Statement

Please refer to Arbtech Consulting Ltd. Tree Schedule and Arboricultural Method Statement, for full details on all surveyed trees and how all aspects of the the development maybe implemented without detriment to retained trees.

ARBTECH
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Project: The Pears Building,
Royal Free Hospital,
London,
NW3 2QG.

Client: The Royal Free Charity

Drawing: Tree Protection Plan

Based on: Royal Free Proposed Site Base; &
Stage D architectural drawings

Drawing No: Arbtech TPP 03

Date: Oct 2014 Scale: 1:200 @ A1 Drawn: MGM

Key:			
Tree Nos.	1	Tree Canopies:	Trunks:
RPAs:	Category 'A' trees:	Category 'B' trees:	Category 'C' trees:
Category 'B' groups:	Category 'C' trees:	Trees to be removed:	39
Protective fencing:	Ground boarding:	Manual excavation:	
Retaining system:			

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the drawing in which the client has been notified.
This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees.
This drawing is not to be read as a definitive part of the engineering or construction design or method statement. An architect or structural engineer should be consulted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.
This drawing was produced in colour - a monochrome copy should not be relied upon.
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