

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 vertical and horizontal framework, well 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-tamper 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".

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:
 a) 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;
 b) 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;
 c) 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.

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 arboriculturalist.
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 reduced 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 practical 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.

'No Dig' Surfacing

Multi-dimensional confinement system.
 Existing vegetation may be removed with hand tools or sprayed with an approved non-residual herbicide such as 'Glyphosate'. The new hard surfacing will be constructed using a 'No Dig' surfacing situated entirely above the existing soil surface and where needed using a proprietary cellular confinement system (GeoWeb or similar) laid over a bi-axial geo-grid (Tensar Trak or similar). Prior to this any small hollows on the surface may be filled with clean sharp sand (not builders sand) to a maximum depth of 150mm. The 'GeoWeb' is to be back filled by hand with a no-fines aggregate of 20mm - 30mm. The area of 'GeoWeb' will be covered with a permeable geotextile fabric and the finished wearing course laid on top. Edge supports of an appropriate size and strength should be set above ground level and secured with haunching or steel pins driven into the ground. The outer edge of the supports may be banked up with clean top soil.

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.

Arboricultural Supervision

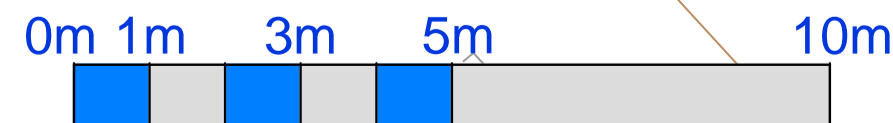
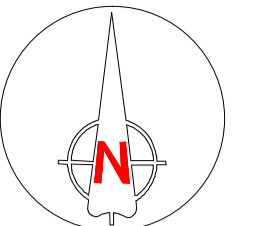
The arboricultural consultant will be required to attend site to directly supervise all demolition and construction works that have to be undertaken within the root protection areas. This will include:
 1. Pre commencement site meeting.
 2. Location of protective measures.
 3. Supervised demolition of buildings, structures, hard surfacing, kerb edging and all associated foundations within and adjacent to RPAs of retained trees.
 4. Manual excavation of site investigations, temporary retaining structures, foundations and support posts within RPAs of tree nos. 3, 7, 8, 9, 10, 11 and 13.
 5. Installation of 'No Dig' hard surfacing.
 6. Any excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services.
 7. Removal of protective measures and sign off.

Arboricultural Method Statement

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

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.



Tree Work Schedule

No.	Species	Works	Category
3	Lime	Crown lift to 5m over site	B
4	Holly	Crown lift to 3.5m above hard surfacing	C
5	Norway maple	Crown lift to 5m over site	A
6	Holly	Crown lift to 3.5m above hard surfacing	C
11	Lime	Crown lift to 4m	C
15	Lime	Fell to ground level; remove stump	C
16	Lime	Fell to ground level; grind out stump	C
17	Lime	Crown lift to 4m over site	B

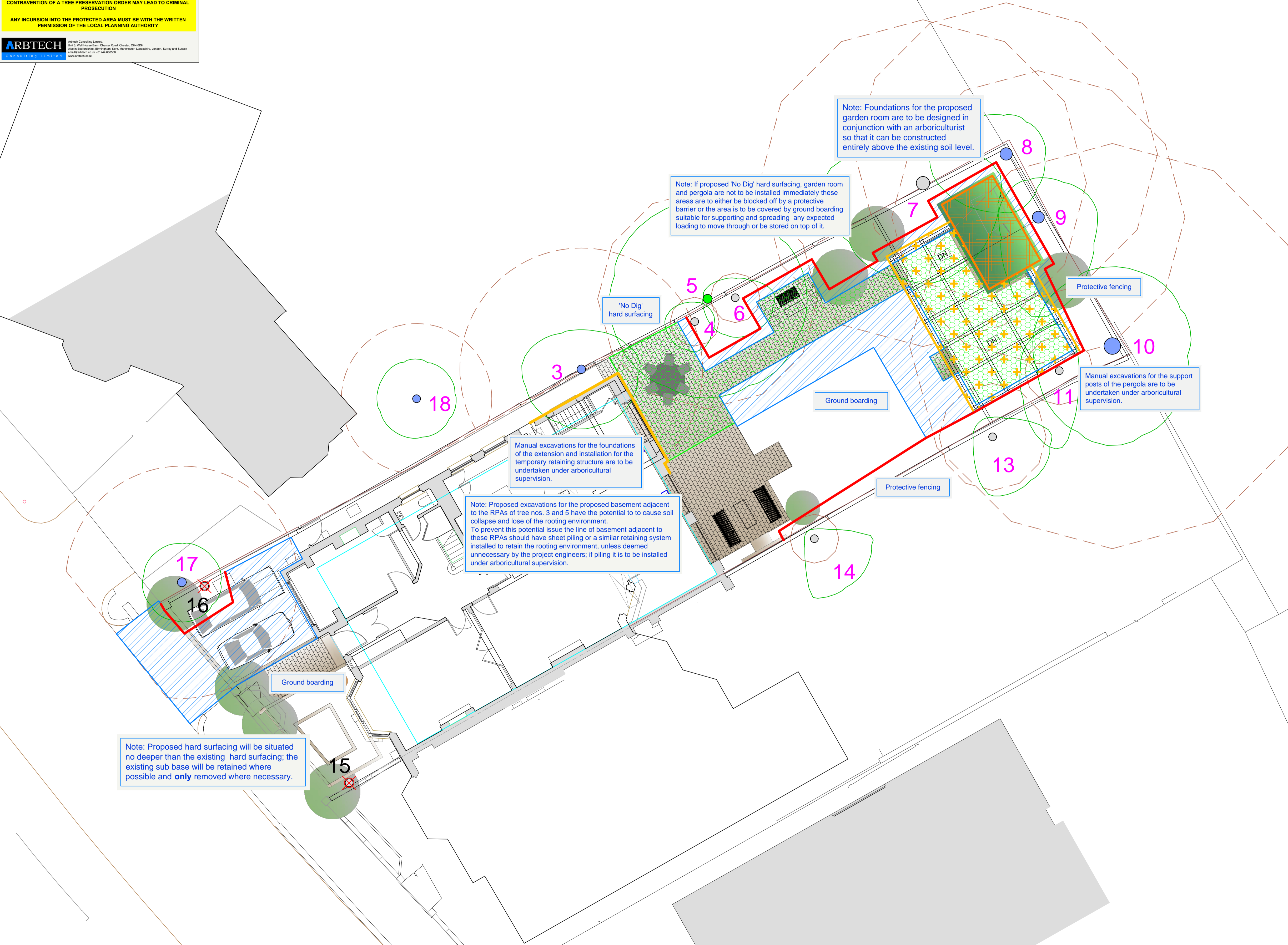
All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations.
 All arisings are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree 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.

Supervised demolition

Demolition of existing structures and foundations situated either partially or completely within 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 it is necessary for the foundations to be removed they are to only be removed where critical to the proposed development and to the minimum depth required. The foundations will be broken up using a hand held pneumatic breaker, hand tools and a wheel barrow to break up and remove the surfacing. 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. If it is likely that there will be any collapse of the soil within the rooting environment excavation is to be stopped immediately and the trench is to be shored up to prevent loss of the rooting environment. Which ever system is used there is to be NO disturbance of the soil on the tree side of the foundations. 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.

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 there 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.



Note: Foundations for the proposed garden room are to be designed in conjunction with an arboriculturalist so that it can be constructed entirely above the existing soil level.

Note: If proposed 'No Dig' hard surfacing, garden room and pergola are not to be installed immediately these areas are to either be blocked off by a protective barrier or the area is to be covered by ground boarding suitable for supporting and spreading any expected loading to move through or be stored on top of it.

Manual excavations for the foundations of the extension and installation of the temporary retaining structure are to be undertaken under arboricultural supervision.

Note: Proposed excavations for the proposed basement adjacent to the RPAs of tree nos. 3 and 5 have the potential to cause soil collapse and loss of the rooting environment. To prevent this potential issue the line of basement adjacent to these RPAs should have sheet piling or a similar retaining system installed to retain the rooting environment, unless deemed unnecessary by the project engineers; if piling it is to be installed under arboricultural supervision.

Note: Proposed hard surfacing will be situated no deeper than the existing hard surfacing; the existing sub base will be retained where possible and only removed where necessary.



Project:
 2 Akenside Road,
 London,
 NW3 5BS.

Client:
 Georgia Masters

Drawing:
 Tree Protection Plan

Based on:
 Pre App with Landscape Plan

Drawing No:
 Arbttech TPP 01

Date:
 Feb 2015

Scale:
 1:100 @ A1

Drawn:
 MGM

Key:

Tree Nos. 1	Tree Categories	Trunks
RPAs: Category 'U' trees	Category 'A' trees	Category 'B' trees
Category 'B' trees	Category 'C' trees	Trees to be removed: 16
Protective fencing	Ground boarding	Foundation design
'No Dig' hard surfacing	Manual excavation	

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
 These notes or any discrepancies found. Arbttech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based.
 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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