48 AVENUE ROAD
ST JOHNS WOOD
LONDON
NW8 6HS

ARBORICULTURAL METHOD STATEMENT

Prepared by
ACD Arboriculture

For

MRS RITA TUCKER

ACD
Ecology
Archaeology
Arboriculture
Landscape Architecture

Written by:	CJP
Checked by:	MW
Date:	27.07.2015
Revision:	
Ref:	PRI20029ams

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1. Executive Summary

1.1. We were instructed to produce this method statement in July 2015, in accordance with BS5837:2012 *Trees in relation to design, demolition and construction.* The subject layout has been produced and is in line with recommendations of the British Standard. Adequate protection can be provided to ensure all retained trees are protected throughout development.

1.2. The existing house is to be extended both above and below ground. A substantial basement is proposed to the rear of the property. Trees to be removed are limited to low quality trees, which have a limited life and current landscape value.

1.3. The relationship between the building and retained trees is sustainable and is not likely to result in any pressure to prune requests from future occupants.

1.4. This arboricultural method statement and tree protection plan include details of all tree protection measures required.

1.5. The fencing and ground protection must be erected after tree removals and surgery but before any demolition or construction contractor enter the site, and before any soil stripping takes place.

1.6. There will be no changes in levels, service routing, machine activity, storage of materials or site hut positioning within areas to be protected, and the protective fencing shall remain in position for the duration of the construction process.

2. Introduction

2.1. Mrs Rita Tucker instructed ACD Arboriculture in July 2015 to prepare the following method assessment.

2.2. This report has been written to clear condition 10 of application 2012/3861/P.

2.3. The implementation of the protection methods recommended within this report are critical for ensuring the retained trees are successfully protected through the construction process and must be implemented prior to any work on site.

2.4. The tree report supplied by Tree Projects, ref: TP/48 Avenue Road, has been used to produce this report and accompanying tree protection plan.

2.5. This assessment is based upon the supplied layout drawing, ref: BDS11/017-11.

2.6. The controlling authority is London Borough of Camden, Contact Camden Reception, 5 Pancras Square, London, N1C 4AG.

3. Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REF: PRI20029-03

3.1. Phasing of operations & site supervision

3.1.1. The tree protection and other arboriculturaly related works must be carried out in the following order:

	Operation	Present	Notes
1	Tree removals & surgery	Tree contractor	See Tree Protection Plan for trees to be removed
2	Protection barriers erected	Fencing contractor	See Tree Protection Plan for position and type of barriers
3	Ground protection installed	Site workers, site manager	See Tree Protection Plan for position and type of protection
4	Pre-start meeting	ACD, site manager, groundwork, foreman,	To 'sign-off' protection prior to any plant activity, demolition & groundworks on site
5	Removal of protection barriers and landscape work	ACD, landscape contractor, site manager	See section 4.6 of method statement

3.1.2. Supervision is required should any unplanned access and/or work be required in the construction exclusion zone.

3.1.3. Supervision will require the arboriculturist to be present throughout the task, to ensure all the arboricultural objectives are met. If the task is to take a long period of time, provided the arboriculturist is satisfied, and after an initial 'tool-box talk', the supervision may be reduced to telephone contact between the site foreman/contractor and arboriculturist.

3.2. Construction exclusions zone

3.2.1. Barriers and/or ground protection must be used to protect all retained trees before any machinery or materials are brought onto the site, and before any demolition, development or stripping of soil commences.

3.2.2. Where all activity can be excluded from the RPA, vertical barriers must be erected to create the construction exclusion zone (CEZ). The default position of which is shown on the appended Tree Protection Plan.

3.2.3. Where, due to site constraints, construction activity cannot be fully or permanently excluded from all, or part of a tree's RPA, appropriate ground protection can be installed.

3.2.4. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

3.2.5. Inside the exclusion zone, the following shall apply:

- No mechanical excavation whatsoever.
- No excavation by any other means without arboricultural site supervision.
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools).
- No storage of plant or materials.
- No storage or handling of any chemical including cement washings.
- No vehicular access.
- No fire lighting.

3.2.6. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees.
- No fire shall be lit such that flames come within 5m of tree foliage.

3.3. Tree protection barriers

3.3.1. The construction exclusion zone will be protected as per the appended tree protection plan that shows the default alignment of the tree protection barriers, to be installed prior to any of the following taking place:

- Archaeology
- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

3.3.2. Stages for installation of barriers:

1) Hand clearance of any vegetation to allow clear working access.

2) Setting out of node points

3) Barriers erected

4) Site meeting with project arboriculturist to 'sign-off' tree protection fencing.

5) Site accessible to demolition/construction traffic

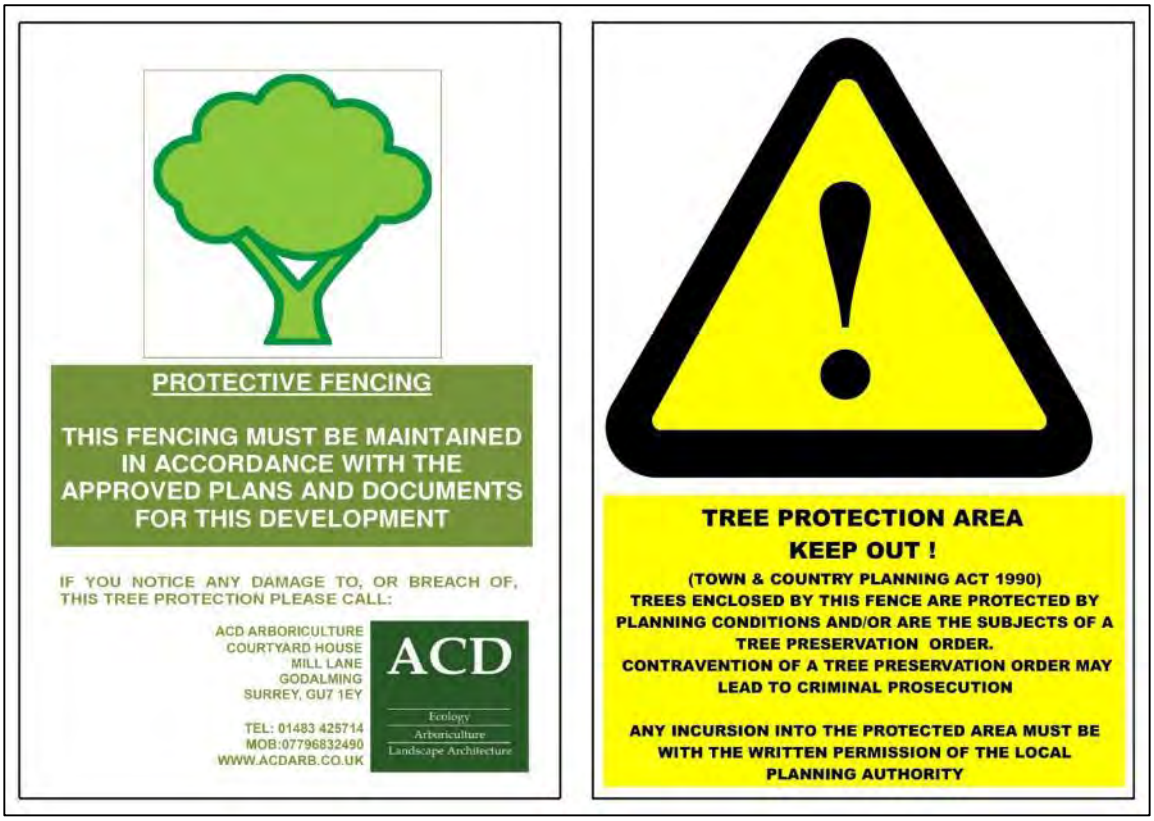
3.3.3. Once erected, all barriers will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.

3.3.4. The default barrier construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold poles that are set vertically and firmly into the ground. A detailed specification can be found on the TPP.

3.3.5. The images below are alternative barrier designs that have been successfully used on site and that ACD are happy to support if a variation from the default style is required. If such a variation is necessary, the approval of the project arboriculturist will be obtained prior to any implementation on site.

3.3.6. Once barriers and/or ground protection have protected the exclusion zone, construction work can commence.

3.3.7. All weather notices should be erected on the barriers (for example see figure below).



Tree protection sign (download from www.acdarb.co.uk)

Weld-mesh panels on scaffold uprights

Weld-mesh panels on wooden posts

Chain-link on angle-iron uprights

3.4. Ground protection

3.4.1. Ground protection is to be installed as shown on the TPP. It must be capable of supporting the expected loads and avoiding rutting, compaction and damage to the soil: as advised in section 6.2.3 of the British Standard.

3.4.2. Stages for ground protection installation:

1) No plant machinery to be used in the area of ground protection for whatever reason
2) Discuss procedure with project arboriculturist
3) Dismantle primary TPF and re-erect in secondary location as shown on TPP (if required) OR erect fencing to protect any newly exposed CEZ not to be covered by ground protection.
4) Any shrubs, saplings or trees to be removed, are to be cut, or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees.
5) Lay woven geotextile over existing ground surface by hand
6) Cover the area with compressible layer, woodchip for example, using hand tools only
7) Cover compressible layer with side butting scaffold boards or plywood boards
8) Confirm surface is acceptable for use with project arboriculturist
9) Area ready for construction access

3.4.3. Any scaffolding required within the area will be erected with the uprights placed on spreader boards.

3.4.4. The boarding will be left in place until the construction works are finished.

3.4.5. A single thickness of boarding laid on the soil surface will provide sufficient protection for pedestrian loads. However, for wheeled or tracked construction traffic movements within the RPA, ground protection will involve the use of temporary cellular confinement systems, reinforced concrete slabs or track-board systems details of which are to be specified by the project engineer and approved for use by the project arboriculturist and local authority before construction commences.

3.4.6. Track-boards can be sourced from Trakmats Europe Ltd, 0845 6435388, www. trakmatseurope.com, or groundguards.com

3.4.7. There is to be no-excavation within ground protection area whatsoever. This includes installation of services and associated utilities.

Scaffold board pedestrian ground protection

Vehicular ground protection trackway

3.5. Site storage, parking, welfare facilities, etc.

3.5.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop off points, etc.

3.5.2. It is acceptable to place site cabins and walkways within the CEZ provided they are installed sensitively:

- Cabins must be placed on sleepers (or similar) to spread the load, avoiding point loading and associated soil compaction.
- The delivery of cabins should ensure that any unloading via 'hi-ab' crane can be carried out without impact on the crowns of retained trees.
- Walkways, if required, should be installed as per the ground protection specification.
- Any utilities for site compounds must be run above ground. For example, WC foul pipes/drainage and temporary electrical connections.

3.5.3. It is imperative that if cabins and walkways are installed, that fencing is erected to limit access to the protected areas. If amendments are made, the project arboriculturist should sign off the proposals prior to their implementation.

3.5.4. Contractor parking and storage areas should be sited outside the CEZ.

3.6. Tree surgery and removal

3.6.1. No trees are proposed for removal. No tree surgery is deemed necessary tgo facilitate construction works.

3.6.2. If any surgery work is proposed, details will be submitted to, and approved by, the council, before being carried out.

3.6.3. All work will be carried out in accordance with BS3998[1] industry best practice and in line with any works already agreed with the council.

3.6.4. The tree surgeon shall ideally be chosen from The Arboricultural Association's Approved Contractor list. All work shall be undertaken at the appropriate time and with the consent and approval of the site agent.

3.6.5. The statutory protection[2] [3] will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

[1] *BS3998:2010- Recommendations for Tree Work.* London: British Standards Institute
[2] *Wildlife and Countryside Act.* (1981) London: HMSO.
[3] *Countryside and Rights of Way Act.* (2000) London: HMSO.

3.6.6. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

3.6.7. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

3.7. Soft landscaping

3.7.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable. At no time is any heavy plant to be used within any protected area. Removal of existing vegetation will be carried out by hand. Turf may be removed using a mechanical turf stripper or with hand tools.

Turfing

3.7.2. Stages for turfing gardens and open spaces:

1) No plant/machinery to be used in the area for whatever reason.
2) Remove TPF to allow access to area.
3) Re-erect TPF to secondary location (if required and shown on plan).
4) Do not reduce any high spots or excavate in any way.
5) Existing poor quality turf may be removed with a turf stripper.
6) Use good quality top-soil to level any low-lying areas and hollows, and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.
7) Import turves by hand in wheelbarrow.
8) Lay turves.

Planting

3.7.3. Should the soil be compacted or have a poor structure that may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

3.7.4. Stages for planting within tree protection areas:

1) No plant machinery to be used in the area for whatever reason.
2) Remove TPF to allow access to area.
3) Re-erect TPF to secondary location (if required and shown on plan).
4) Remove existing vegetation by hand, turf may be removed using a mechanical turf stripper.
5) Do not reduce any high spots or excavate in any way.
6) Import good quality top-soil by hand (with wheelbarrow) into area.
7) Level to a depth of no more than 100mm with hand tools.
8) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted).
9) Any mulch should also be imported and spread by hand.

3.7.5. No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur.

3.8. Installation of underground services

3.8.1. Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.

3.8.2. Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing should be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods should be used: Microtunnelling, Surface-launched directional drilling, Pipe ramming or Impact moling (see BS5837:2012 Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. If this is case, the following methodology must be followed:

3.8.3. Stages for installing services by hand within tree protection areas:

No plant machinery to be used in the area for whatever reason

1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
2) Remove just enough tree protection fencing to allow access to area and facilitate trenching.
3) Remove any surface vegetation or existing hard surfaces using hand tools.
4) Using and air-pick excavate the trench, keeping to minimum dimensions required.
5) Roots occurring in clumps of 25 mm diameter and over are encountered they will be retained, and kept damp by covering with hessian (re-wetted as required). If required, these should be severed only following consultation with an arboriculturist; as such roots might be essential to the tree's health and stability.
6) Feed in services.
7) Back fill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported top-soil to BS3882 (BSI, 2007), firming down with heels.
8) Repeat step 7 until trench is filled.
9) Re-erect tree protection fencing as per approved plan.

3.8.4. The method of excavation above, for trenching within RPAs, is using air excavation. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. ACD can provide details of contractors supplying air excavation services if required.

3.8.5. Alternatively trenchless technology, such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust

pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.

3.8.6. Reference can be made to NJUG Vol 4[4] for guidance, but any approach must be approved by the project arboriculturist and brought to the attention of the local authority tree officer.

3.9. Excavation within RPAs

3.9.1. Stages for excavation within RPAs:

1) Contact project arboriculturist to hold pre-start site meeting, 'toolbox' talk and supervise the operation.
2) Remove TPF to allow access to area (if required).
3) Identify sensitive area.
4) Remove hard surface if necessary (see relevant section of this report).
5) Excavate with no-tines bucket, or by hand, under close supervision.
6) If roots are found, clear by hand around them.
7) If roots found are greater than 25mm diameter then cover with damp hessian and keep moist until backfilled. If excavation requires all roots to be severed then proceed as below.
8) Cleanly sever roots with bypass secateurs, loppers or pull cut saw at right angles to root. Avoid tearing or ripping the root.
9) Backfill as soon as possible to cover cut root ends.

24.2. If, for whatever reason, the project arboriculturist feels that a tree's stability has been compromised during the operation, then the LPA shall be contacted and the arboricultural officer (or appropriate landscape officer) notified. A decision can then be made as to the best way forward.

[4] National Joint Utilities Group. (2010). *Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook.* NJUG.

Appendix 1: Tree Survey Schedule

Tree Projects BS 5837 Survey. Schedule of trees at: 48 Avenue Road NW8 6HS

Date: 13th March 2012

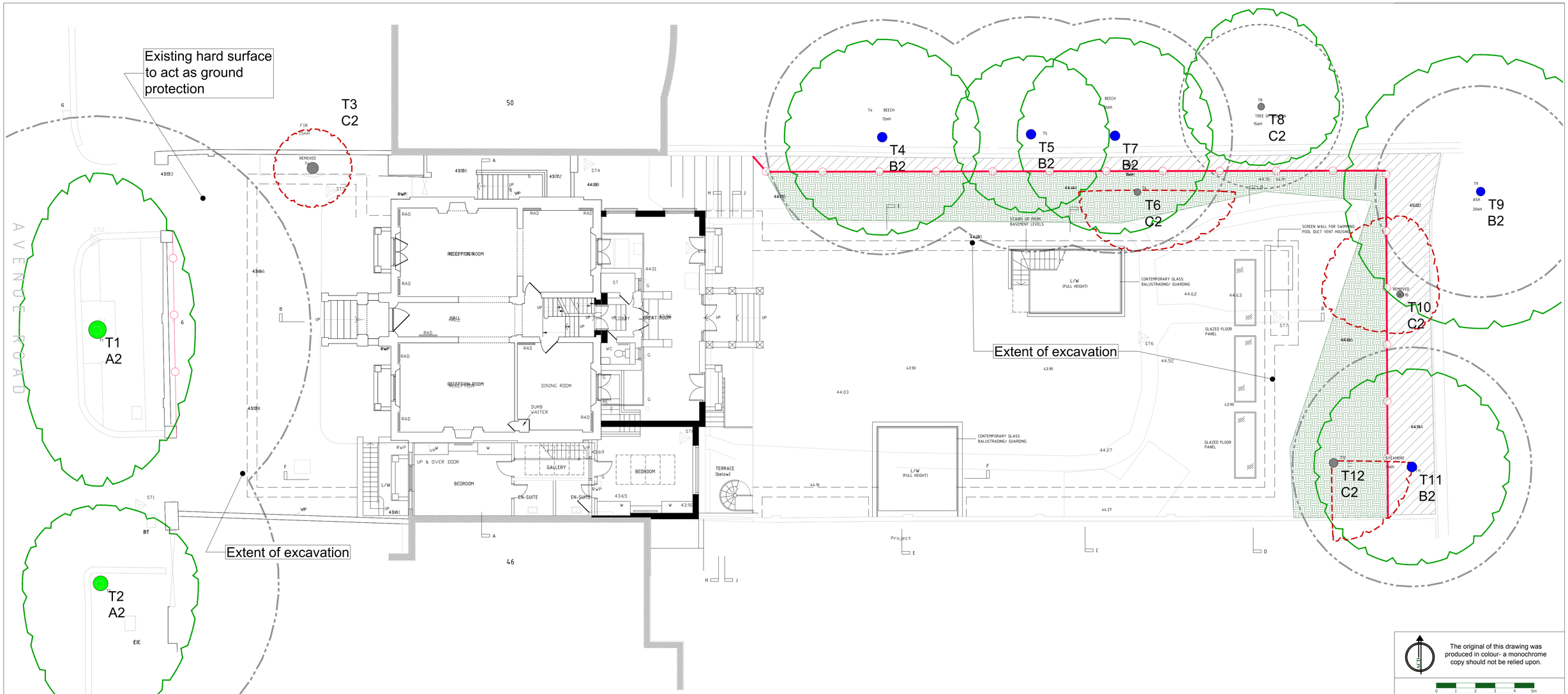
Weather: dry and bright

Tag	Name	Latin	DBH	Stem Cnt	Height	Low C/Hgt	Nth	East	Sth	West	Age	Life Exp	Phys. Cond	BS Cat.	Comments	Prelim. Mgt Recom.	RPA m2	RPA radius	RPA square
T1	London Plane	Platanus X hispanica	910	1	20	5	8	5	8	4	M	>40	G	A2	street tree directly in front		374.7	10.9	19.4
T2	London Plane	Platanus X hispanica	760	1	18	5	4	5	7	4	M	>40	G	A2	street tree to south forward of no 46		261.3	9.1	16.2
T3	Leyland Cypress	X Cupressocyparis leylandii	580	1	10	2.5	2	2	2	2	M	10+	G	C2	tree cut to cylinder		152.2	7.0	12.3
T4	Beech	Fagus sylvatica	500	1	13	6	5	5	5	5	M	>40	G	B2	Diameter estimated. Canopy dimension estimated. Tree in neighbouring property.		113.1	6.0	10.6
T5	Beech	Fagus sylvatica	500	1	13	3	4	4	4	4	M	40+	F	B2	Diameter estimated. Canopy dimension estimated. Tree in neighbouring property. Ivy on stem. Unable to inspect stem due to Ivy.		113.1	6.0	10.6
T6	Bay	Laurus nobilis	350	1	8	0	0	5	3	3	MA	20-40	G	C2			55.4	4.2	7.4
T7	Beech	Fagus sylvatica	500	1	16	6	5	5	5	5	M	>40	G	B2	Diameter estimated. Canopy dimension estimated. Tree in neighbouring property. 3rd in line of the beech, level aprox 500mm above garden level of no.42		113.1	6.0	10.6
T8	Tree of Heaven	Ailanthus altissima	350	1	15	5	5	4	3	4	M	20-40	G	C2	Diameter estimated. Canopy dimension estimated. Tree in neighbouring property.		55.4	4.2	7.4
T9	Sycamore	Acer pseudoplatanus	450	1	15	6	7	7	7	7	M	>40	G	B2	Diameter estimated. Canopy dimension estimated. Tree in neighbouring property. tree in gdn to rear nth		91.6	5.4	9.6

Tag	Name	Latin	DBH	Stem Cnt	Height	Low C/Hgt	Nth	East	Sth	West	Age	Life Exp	Phys. Cond	BS Cat.	Comments	Prelim. Mgt Recom.	RPA m2	RPA radius	RPA square
T10	Sycamore	Acer pseudoplatanus	350	1	9	3	4	2	2	4	MA	10+	F	C2	Ivy on stem. Unable to inspect stem due to Ivy.		55.4	4.2	7.4
T11	Sycamore	Acer pseudoplatanus	510	1	15	6	5	5	5	5	M	20-40	F	B2	Ivy on stem. Unable to inspect stem due to Ivy.		117.7	6.1	10.8
T12	Black Mulberry	Morus nigra	450	1	3	0	0	4	4	0	OM	10+	P	C2	Canopy dimension estimated. tree collapsed and seriously decayed with no real haracter or amenity value		91.6	5.4	9.6

Appendix 2: Tree Protection Plan

PRI20028-03



TREE TO BE REMOVED

A CATEGORY TREE
B CATEGORY TREE
C CATEGORY TREE
U CATEGORY TREE

ROOT PROTECTION AREA (RPA) FOR RETAINED TREES

INDICATIVE SERVICE ROUTE AVOIDING PROTECTION AREAS

EXISTING SITE FEATURES

PROPOSED SITE LAYOUT

PHASING & SUPERVISION OF DEVELOPMENT

Before any work starts on site, the tree protection measures shown on this plan are to be installed and a pre-start site meeting with the project arboriculturist, groundwork contractors, site manager and LPA arboricultural officer/landscape officer held.

Additional site supervision and input from the project arboriculturist is to occur should any unplanned access and/or work be required in the construction exclusion zone

RESTRICTIONS WITHIN TREE PROTECTION AREAS

Inside the exclusion area of the fencing, the following shall apply:

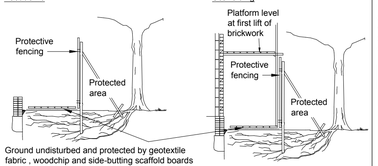
- No mechanical excavation whatsoever
- No excavation by any other means without arboricultural site supervision
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fire lighting

In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection areas of retained trees
- No fire shall be lit such that flames come within 5m of tree foliage.

Ground Protection
Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

Foot traffic



Scaffolding

Ground undisturbed and protected by geotextile fabric , woodchip and side-butting scaffold boards

For pedestrian movements only, a single thickness of scaffold boards should be 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 geotextile.

For pedestrian operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards should be placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile.

For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. pre-cast reinforced concrete slabs) should be employed to an engineering specification designed in conjunction with arboricultural advice to accommodate the likely loading to which it will be subjected.

WHY TREE PROTECTION IS NEEDED

1) **Soil compaction kills roots-** caused by plant movement and storage of materials within protected areas**.**
2) **Trenching severs roots-** many small roots grow within the top 600mm of soil. Even the removal of the top 200mm can cause damage.
3) **Soil pollution kills roots-** Dripping fuel storage or cement washings can contaminate the soil resulting in root death.
4) **Raising & lowering levels kills roots-** the soil used to increase levels can compact the underlying soil (see point 1). Lowering levels will remove roots causing damage to the tree.
5) **Bark and branch damage-** bark removal and branch damage can allow disease and fungi into the tree.

The impact of any of the above can take years to show- trees can have huge reserves of food and water.

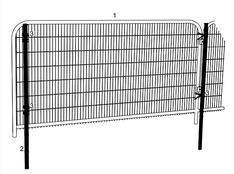
Construction Exclusion Zone

Root protection areas (RPA) of retained trees within which all construction activity is restricted.

All trees that are being retained on site must be protected by barriers and/or ground protection before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers must be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection can be installed.

Default position for the tree protection barriers.

BS5837:2012 Figure 2- barrier specification



1 Weldmesh (e.g Heras) Panels
2 Scaffold pole uprights driven firmly into ground, then secured to panels with wire ties
3 Panels to be interlinked using clamps

The original of this drawing was produced in colour- a monochrome copy should not be relied upon.

0 1 2 3 4 5m

Rev	Date	Details	Drawn

ACD
Ecology
Archaeology
Arboriculture
Landscape Architecture

☐ Rodbourne Rail Business Centre, Grange Lane, Malmesbury, Wilts, SN16 0ES
Tel: 01666 825646 Fax: 01666 824654

☒ Courtyard House, Mill Lane Godalming, Surrey, GU7 1EY
Tel: 01483 425714

☐ 12 Southgate Street, Winchester, Hampshire, SO23 9EF
Tel: 01962 855604

www.acdlandscape.co.uk

scheme: 48 Avenue Road
St Johns Wood, London
client: Mrs Rita Tucker
drawing: Tree Protection Plan
date: July 2015
scale: 1:100@A1
dwg no: PRI20029-03
drawn: CJP checked: MW

ACD LANDSCAPE ARCHITECTS LTD
RODBOURNE RAIL BUSINESS CENTRE
GRANGE LANE
MALMESBURY
WILTSHIRE
SN16 0ES
TEL: 01666 825646
email: mail@acdlandscape.co.uk
CONTACT: JOHN CONSTABLE

ACD ECOLOGY LTD
RODBOURNE RAIL BUSINESS CENTRE
GRANGE LANE
MALMESBURY
WILTSHIRE
SN16 0ES
TEL: 01666 825646
email: mail@acdlandscape.co.uk
CONTACT: DANIEL WOOD

ACD ARBORICULTURE LTD
COURTYARD HOUSE
MILL LANE, GODALMING
SURREY, GU7 1EY
TEL: 01483 425714
email: m.welby@acdarb.co.uk
CONTACT: MARK WELBY

ACD (LANDSCAPE ARCHITECTS) SOUTHAMPTON LTD
12 SOUTHGATE STREET
WINCHESTER
HAMPSHIRE
SO23 9EF
TEL: 01962 855604
email: a.wells@acdlandscape.co.uk
CONTACT: ANNETTE WELLS

ECOLOGY * ARBORICULTURE * ARBORICULTURAL SITE MONITORING AND SUPERVISION LANDSCAPE & VISUAL IMPACT ASSESSMENT * LANDSCAPE DESIGN & PLANNING * LANDSCAPE MANAGEMENT * LANDSCAPE AUDIT * PROJECT MANAGEMENT * EXPERT WITNESS