OMC Associates

BSi 5837 Tree Survey for Development

CLIENT:	Mr & Mrs Lampen
CONTACT:	Frank Lampen
SITE:	1a Winscombe Street, London, N19 5DG
OUR REF:	01002SV/CJO/0902
DATE OF REPORT:	9 February 2016

Prepared by: Christopher Overbeke MSc Arb, BA (Hons), ANC (Dist), M, Arb A

28 Shelford Road, Cambridge, CB2 9NA
Tel: 01223 842253 Fax: 01223 842253 Mob: 07771 708474
Email: info@omc-associates.co.uk

CONTENTS

1.0 INTRODUCTION

1.1 Brief

We are instructed by Frank Lampen to provide a BS 5837 compliant arboricultural report at the above site to accompany a planning application for a small extension following a request from the London Borough of Camden for such information because of potential impact on neighbouring trees.

This report incorporates an assessment of how neighbouring trees are potentially affected by the development, an arboricultural impact assessment demonstrating how it may be affected by the proposed development, an arboricultural method statement providing the details necessary to ensure they are not damaged during construction and a tree protection plan illustrating the method statement.

The report contains the following appendices:

Appendix 1: a tree survey plan showing canopy extents and indicative girth. Both are coloured in the BS 5837 quality category allocated to the tree
Appendix 2: a tree constraints plan (TCP) indicating root protection areas (RPAs) of trees to be retained with the proposed scheme superimposed to indicate where and extent of encroachment;
Appendix 3: a tree protection plan (TPP) clearly illustrating the trees in relation to every aspect of the proposed scheme and every aspect of required protection. Where this is phased, multiple TPPs will be provided for each phase for clarity;
Appendix 4: a cascade chart explaining tree quality assessment:
Appendix 5: photographs
Appendix 6: Summary of arboricultural impacts and resolutions
Appendix 7: Monitoring schedule and record

1.3 Documents

We have pdf copies of proposed plans by Carbon reference 200_Rev02

1.4 Site Description

The site the ground floor and sub ground flat of a multi storey Victorian end of terrace building. There is a small enclosed yard to the rear with minor peripheral planting. It's right hand (northern) boundary is contiguous with the rear boundary of 43 Chester Road. Within this property's rear garden are three trees close to the right hand boundary of the subject property. The ground level of the rear garden of 43 Chester Road is approximately 650mm higher than that of the rear yard of the subject property and this is retained by a small brick wall

1.5 Planning Proposal

It is proposed that a 2m deep single floor extension of the same width as the flat is attached to the rear elevation.

2.0 TREES

2.1 Trees data

Dimensions relating to height, crown spread (at four cardinal points where considered necessary), girth at 1.5m as well as age class, structural and physiological condition and BS 5837 (2012) category are noted.

The inspection assesses the height of the crown and suitability to develop near to it.

This survey does not include a detailed assessment of the health of the tree but clear faults are factored into structural and physiological category

2.2 Trees and the law

This report does not formally identify whether planning restrictions apply to the trees.

We understand that the site is within a designated Conservation Area.

Please note that no works around trees should be carried out without the approval of the Local Planning Authority (since it is likely to incur large fines) unless planning permission has been granted that indisputably necessitates the removal or facing back of any of these trees..

Section 197 of the Town & Country Planning Act 11002 states that it shall be the duty of the local planning authority to ensure whenever it is appropriate, that in granting planning permission, “adequate provision is made, by the imposition of conditions, for the preservation or planting of trees” Even when no specific legal protection exists it may be necessary to obtain a felling license from the Forestry Commission if the volume of timber removed exceeds felling license quotas.

Section 11 of the National Planning Policy Framework adopted in March 2013 “Conserving and enhancing the natural environment” states that, “the planning system should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes…… recognising the wider benefits of ecosystem services and minimising impacts on biodiversity”. It also stresses the importance of “protection, enhancement and management of green infrastructure”

The Wildlife & Countryside Act 1981, the Conservation (Natural Habitats etc.) Regulations 1994 and the Countryside & Rights Of Way Act 2000 are all of relevance.

Tree No.	Species	Height (m)	Dia. at 1.5m (mm)	Crown Radius (m) N S E W	Age Class	SULE	Condition Structural	Condition Physiological	Quality category	Tree-work	Space Below Crown	RPA (radius m)	Comments
T1	*Chamaecyparis lawsoniana* Lawson cypress	8.5	180#	2 0.5 2 2	YM	>40	Good	Good	C2	N	N/A	2.1	Well established third party specimen with good conical form in good health and with substantial further growth potential
T2	*Chamaecyparis lawsoniana* Lawson cypress	8.5	120#	0.5 1 1 1	YM	>40	Good	Fair	C2	N	N/A	1.5	Established third party tree close to the dominant T1 and effectively forming a single crown with T1 that has a good with good conical form; substantial further growth potential
T3	*Prunus cerasus* Sour Cherry	7.5	240#	4 2 5 5	YM-M	>40	Good	Good	C2	N	Y 2.3-SW	3.0	Maturing, established and somewhat asymmetric third party tree in good health close to boundary
S1	*Pyracantha* Spp. Firethorn	2	M	Fence trained	M	>40	Good	Good	C2	N	N/A	N/A	Mature fence trained shrub

Key next page

2.4 Tree details

T1 & T2 are two young mature cypresses in good health that grow close to one another and coalesce to form a single, attractive conical crown though T1 is the dominant of the two.

The cherry tree T3 is likely to be self seeded and is a young mature tree of no distinction with a somewhat asymmetric crown that overhangs the rear yard of the subject property.

None of trees warrant a classification greater than C2 though the cypresses may in time, subject to impact on adjoining gardens, develop as a pair into B classification trees on landscape ground.

Prefix: **T –** Tree **S** – Shrub/Climber **TG/SG** – Group/Hedge of **T**rees or **S**hrubs
***** - Estimate

Dia.: **N/A -** Tree less than 100mm (for shrubs: young, semi-mature or mature)

Age Class:

Young	Generally less than 10 years old and high life expectancy
Semi-mature	Within first 30% of life expectancy and significant growth to be expected
Early-mature	Typically 30-60% of life expectancy, full size almost reached
Mature	Typically 60% or more of life expectancy, full size reached with very gradual, slight further increases in size
Veteran	A stage of development where intervention/management may be required to ensure the tree remains safe
Over-mature	Where a tree is so senescent that management is not worthwhile

Life Expectancy: How many years before tree is likely to need removing

Crown Radius: If crown is symmetrical, one dimension is given for the radius followed by "S"

B.S. Category: **See Appendix 2**

Physiological Condition:

Good	Healthy tree with no symptoms of significant disease
Fair	Some disease noted and/or vitality is below what would be expected
Poor	Significant disease noted and/or very low vitality
Very Poor	Tree is dying

Structural Condition:

Good	No significant structural defects
Fair	Defects noted but not sufficient to warrant immediate work
Poor	Significant defects. Monitoring and/or remedial works required
Very Poor	Significant defects requiring immediate work or tree removal

Space Below A useful indicator to determine the practicality of developing below the crown. Rather than a measurement which can be misleading and open to interpretation.

Y	Potential to develop below the dripline with either no treework or removal of limbs that will not adversely affect the health and appearance of the tree.
N	No scope to develop below the dripline of the tree
N/A	Tree to be removed

Treework: This is general since the report is not a tree-work specification. It indicates:

H High priority. For trees to be retained and where work required to make safe

L No urgent work required but would benefit from some intervention

N No treework identified as necessary in the foreseeable future

P Facilitation tree surgery advised

R Remove – tree identified to be removed because "U" category tree

RA Tree removed to accommodate development

B.S. Category:

A - Those of high quality and value i.e. make a substantial contribution; to retain

B - Those of good/moderate quality and value, might be Cat. "A" but slightly impaired

C - Those of low quality i.e. adequate to remain until new planting is established or young tree

U - Those of such poor condition that any existing value would be lost within 10 years

1 – Mainly Arboricultural value **2 – Mainly Landscape value** **3 – Mainly Ecological value**

3.0 TREE RELATED SITE CONSTRAINTS

3.1 Tree crowns/canopies

Where crown/canopies of trees to be retained overhang a development site, careful assessment of the implications must be made. Where it/they obstruct building work - including erection of scaffolding - or where they come into contact with the new build the crown needs to be skillfully pruned to accommodate the development. This may simply involve appropriate crown lifting (removal of lower limbs) or trimming back lateral branches. Schemes that require excessive and inappropriate crown reduction so that the trees are adversely affected in terms of health and form or regular long term cutting back to avoid conflict with the new structure and/or future residents represent poor design and should be avoided.

The extension is 2.6m high and less than 2m high relative to the ground level of the cherry tree. Though no limb removal is necessitated by its construction, it is advised that Mr Lampen exercise his right to remove the lowest of the overhanging limbs to perhaps provide a crown clearance from ground level of 3m. This is advised more to reduce future debris from T3 on the proposed new roof and in gutters than to facilitate construction, though some benefit in this latter respect may accrue. If this is located within a Conservation Area, a formal Notification to the Council would be required unless this is agreed through a planning consent.

3.2 Indirect damage (Subsidence)

This is applicable where a shrinkable substrate prevails. An appropriate foundation compliant with NHBC guidelines must be designed to ensure that tree and building co-exist for the long term and longer term pressure is not applied to remove or reduce trees because of indirect damage.

3.3 Root Protection Area (RPA)

An RPA is defined in BSi 5837 (2012) as “the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree”.

The 2012 British Standard formula for calculating the RPA has been used in conjunction with existing site conditions that can affect root morphology and dispositions such as the presence of roads, structures and underground apparatus; topography and drainage and the soil type and structure to determine likely RPAs. The resultant RPAs are shown in appendix 2 and have been informed by the 700mm retaining wall along the share boundary.

Though encroachment upon the RPA should generally be avoided, it can be acceptable in certain conditions. This involves assessment of the tolerance levels of the tree based on a variety of factors.

4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA)

4.1 Affect of development on trees - General

The objective of the report is to identify and evaluate the extent of direct and indirect damage on existing trees that may arise as a result of the implementation of the proposed development without appropriate guidance.

A tree may take a century to reach maturity but it can be irretrievably damaged in a few minutes often because of a failure to appreciate the vulnerability of trees and particularly the root systems. *Irreparable damage is frequently done to existing trees in the first few days of a contractor's occupation of a site.*

This report seeks to provide guidance on how worthy trees in the immediate vicinity can be protected during the development.

It is important to be aware that the effects of tree damage may not be apparent for some time.

There are a multitude of activities that can kill or damage trees on construction sites and there is a need to be mindful of these activities and why they may be so harmful to trees. These are briefly summarized below.

4.1.1 Direct mechanical damage (*Referred to as D1 in this report*)

Direct damage to the crown or stem is unlikely to kill a tree unless it is significant but May disfigure it and result in long-term decay setting in. This often occurs as a result of construction activities taking place too close to trees without protection or appropriate pre-construction tree surgery.

4.1.2 Ground compaction (*Referred to as D2 in this report*)

This is likely to be the most common cause of tree death or decline on a building site. The vast majority of tree roots are located in the upper soil horizons where soil conditions are most favourable for root growth. It is these upper horizons that are most vulnerable to ground compaction. Compaction destroys soil structure and this prevents soil moisture absorption into the ground and loss of natural aeration. This process deprives tree roots of moisture as well as giving rise to root asphyxiation and is often fatal to trees.

4.1.3 Changes in ground level (*Referred to as D3 in this report*)

The majority of a tree's root systems are generally located in the upper 0.6m of the ground and the bulk of these roots happen to be very small, delicate and essential feeder roots. Reductions in ground level such as soil stripping can be catastrophic for a tree's health. Conversely increases in ground level can result in root asphyxiation.

4.1.4 Severance of roots by ground works (*Referred to as D4 in this report*)

Excavation of ground to remove old foundations and hard standing, construction of conventional concrete footings, new hard standing or the installation of services such as water/sewerage pipes, gas/electricity cables, TV/telephone cables using open trenching within the drip-lines of trees severs

any roots present, potentially leading to destabilization, decline or death of trees. It May also have implications for local soil hydrology.

4.1.5 Contamination of ground (*Referred to as D-5 in this report*)

Spillage of petrol, diesel, paint removers, wood preservatives and many other toxic liquids regularly used on building sites can kill roots.

4.1.6 Change in ground surface (*Referred to as D6 in this report*)

Covering surfaces with impermeable materials – especially areas that were previously open ground can prove fatal for tree roots. Trees derive moisture from regular moisture recharge of the ground and nutrients generated by the nutrient cycle from decomposing leaf litter. Impervious surfaces can also prevent gaseous interchange between the ground and the atmosphere creating a build-up of toxic waste gases such as carbon dioxide and a deprivation of oxygen.

4.2 Affect of development on trees specific to this site

The proposed footprint falls within an estimated 15% of the nominal RPA of T3. Ordinarily, for a tree of this age and vitality, this would be well within its threshhold of tolerance. In view of close proximity to the stem, however, some caution may be advisable when excavating to accommodate the ground slab foundations and rebuilding the retaining wall that will form the base of the NE flank wall in terms of possible mechanical damage to roots.

Loss of surface rooting area is not deemed to be detrimental to the cherry tree.

Trees can tolerate a degree of root severance and appropriate measures can be adopted through an appropriate arboricultural method statement to reduce any impact on roots to perfectly acceptable levels.

Additionally general construction activity within T3's RPA may give rise to damage types D1, D2 & D5 as described in section 4.1. In view of the small scale nature of the development and that this area is largely covered in slate and forms the circulation area of the rear garden, this is a remote possibility but provision is detailed in the arboricultural method statement to avoid such an eventuality.

The roof of the extension will be lower than the canopy.

Canopies and RPAs of T1 & T2 are entirely unaffected by the proposal.

5.0 ARBORICULTURAL METHOD STATEMENT (AMS)

5.1 Introduction

Successful avoidance of any damage can be achieved through appropriate tree protection details, correct implementation of these details and close liaison with the Council's tree officer and the appointed arboriculturist. The Tree Officer should be informed of and given the opportunity to inspect tree protection measures prior to commencement of the development.

These details and procedures are provided in the arboricultural method statements outlined below and illustrated in the Tree Protection Plan.

5.2 CEZ (Construction Exclusion Zone)

Not required

5.3 Treework necessitated by the scheme

Not required but a crown lift to achieve crown clearance above the extension is suggested.

5.4 Root Pruning

Where any excavation is carried out within identified RPAs, roots may be encountered or exposed. This is anticipated during removal of existing flags, dismantling the section of retaining wall where the extension flank wall will be built and excavation and ground leveling of the section of footprint T3's RPA to accommodate a reinforced ground slab.

During these processes, the following guidelines must then be adhered to:

- No roots of greater than 25mm must be cut without consultation.

- All roots of less diameter that are cut must be cleanly cut with sharp secateurs or loppers, preferably to a side branch, and immediately covered with damp, clean, hessian sacking (in summer months) which must be kept damp so long as the roots remain exposed or dry hessian sacking in winter to prevent desiccation and protect from rapid temperature changes.

- Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builder's sand should not be used because of its high salt content which is toxic to roots) or other granular fill, before soil is replaced.

- If any new concrete is to be used, an impermeable membrane must be placed along the exposed face to prevent contact with and scorching of roots and to ensure leachates do not contaminate the immediate rooting area in the future.

  These procedures must be followed and liaison with the arboriculturalist be maintained at all times. The arboriculturalist need not attend site so long as remains in contact with the builders and can access photos during the excavation period.

5.5 Ground protection outside the CEZ but within the RPA

Protecting the ground of RPAs that not protected by a CEZ is important to avoid compaction and the absorption of potentially toxic materials. The possibility of this occurring on such a small scale development and where the ground is already covered in slate for pedestrian circulation is remote.

Ground protection, nonetheless, is advised and illustrated in the TPP in appendix 3. It is to comprise a single 1.2x2.4m 12mm sheet of ply board placed over a geotextile membrane to prevent any leachates entering the ground.

5.6 Floor slab and structure.

The procedure for preparing the ground for the reinforced ground slab is detailed below. It is based on the premise that a maximum reduction in ground level of 300mm is achieved. If, during the manual dig, no (more than 30mm) are encountered, it would be possible to excavated a further 100mm or until a substantial root is encountered.

If substantial roots that cannot be moved aside are encountered, this depth will need to be reconsidered or advice sought from the arboriculturist. The arboriculturist need not attend this process but should be in contact for advice should it arise.

- No clearance of the ground should take place when the ground is wet or saturated to avoid the possibility of compaction. The period between May and October is advisable.
- Mark the area to be excavated and manually dig using hand operated tools only or air spade, carefully following the procedures detailed in section 5.4.
- Once a maximum depth of 300mm is achieved (any reduction on this depth would be beneficial) and no roots of sufficient dimension were encountered to prevent this depth be attained, lay a geotextile mat down to prevent roots growing into the sub-base. This should be impermeable.
- Lay the sub base as advised by the structural engineer and the reinforcing metal bars.
- Pour the concrete.

All work whilst constructing this surface must takes place on protected ground

5.7 Underground services

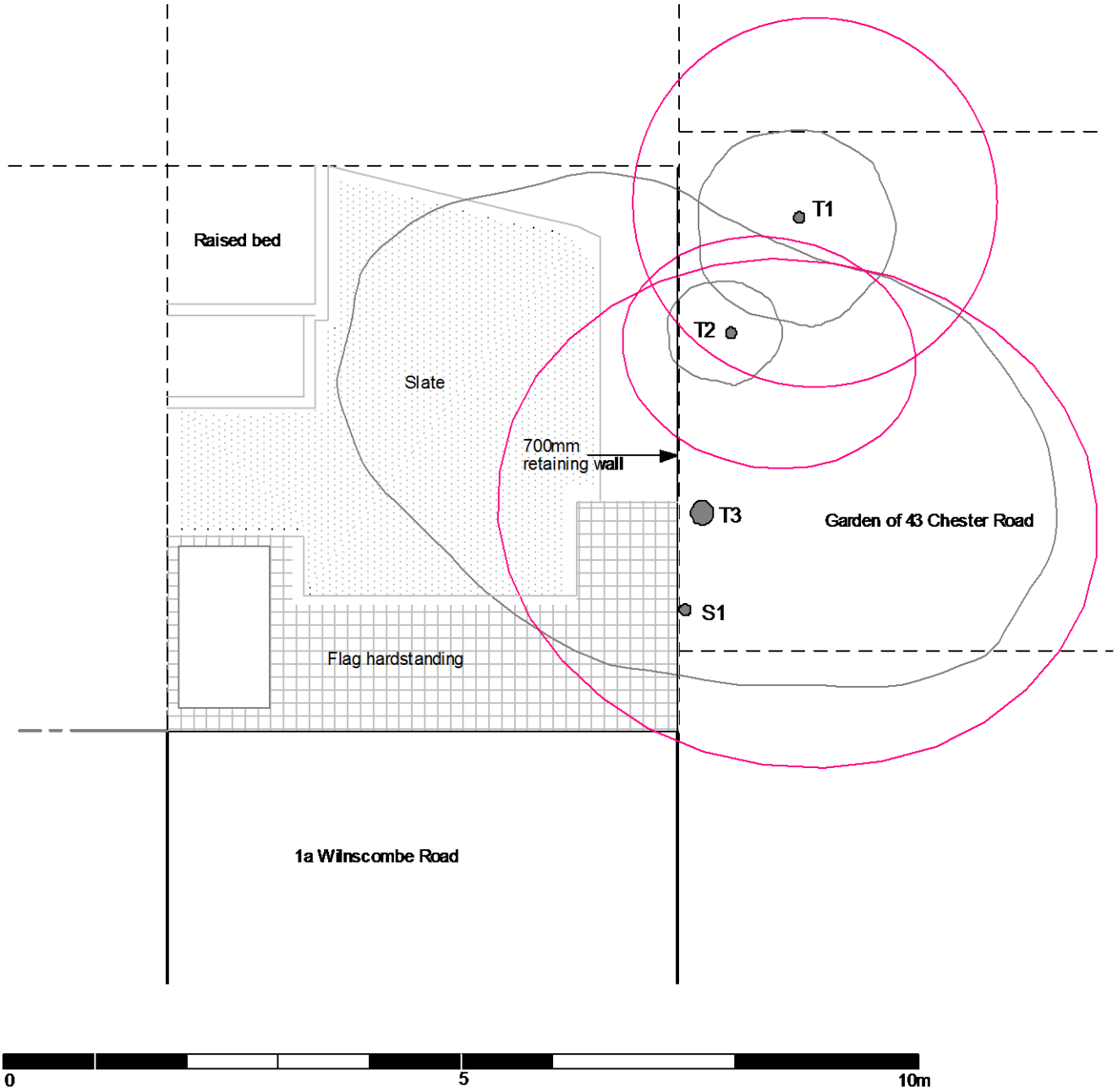
No new underground services are to be laid within the RPA of T1.

5.8 Additional Precautions outside the Tree Exclusion Zone - General

- All weather notices should be erected on the barrier with words such as “Exclusion Zone – Not to be moved without appropriate consent”.
- Materials that will contaminate the ground such as diesel oil and concrete mixings will not be discharged within the RPA or within 10m of any of the tree stems.

- Notice boards, telephone cables or other services should not be attached to any part of the tree.
- No fires with the potential for flames to extend to within 5m of any point of the tree are to be lit.

APPENDIX 1



Dripline and stem - colour denotes BS 5837 category

A

B

C

U

Where crown line is broken, indicates removal

Root Protection Area (RPA)

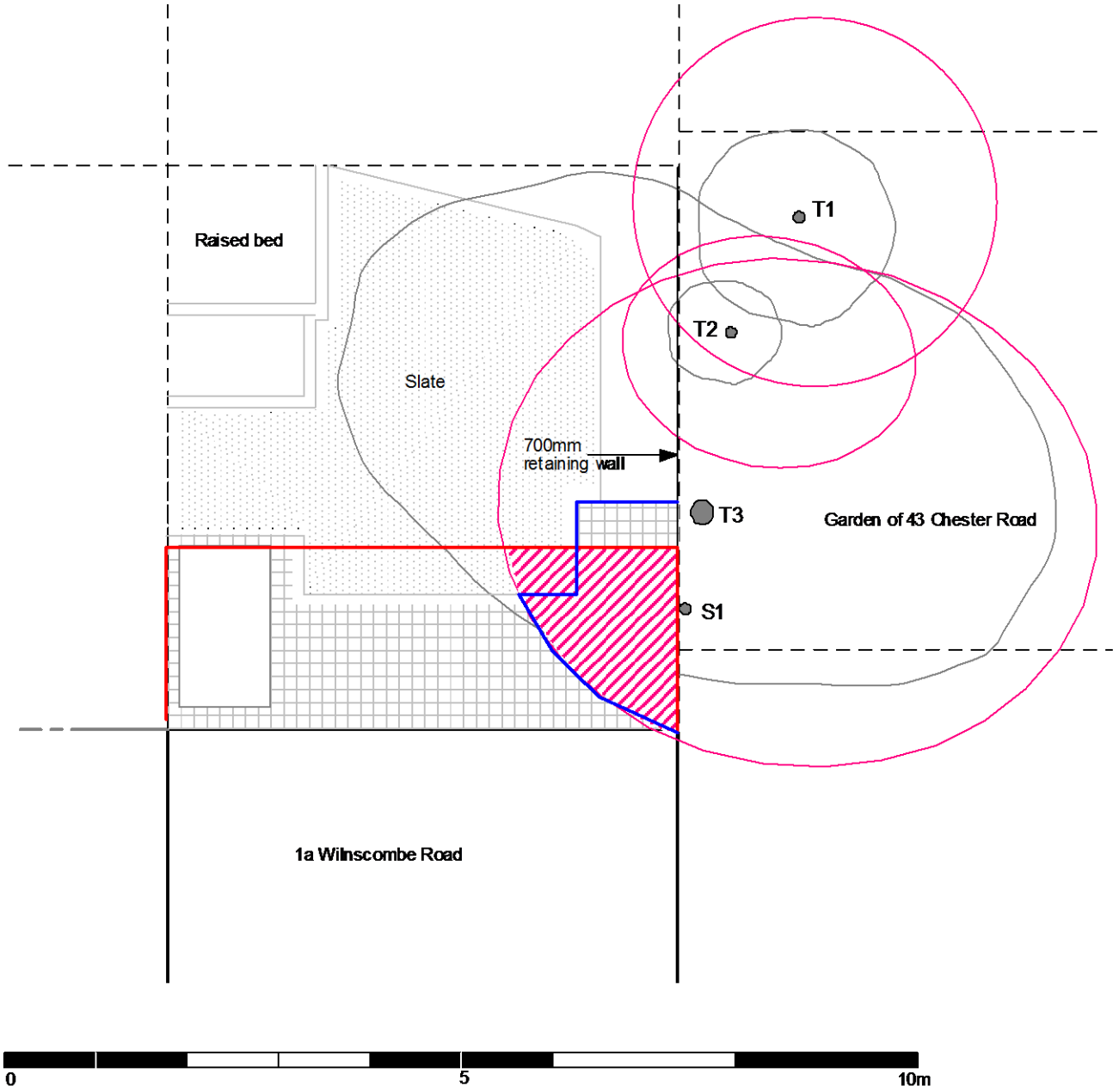
To be read in colour

OMC ASSOCIATES
T: 01223 842253
www.omc-associates.co.uk

SITE:	1a Wilnscombe Road, London N19
CLIENT:	Mr Frank Lampen
OUR REF:	1002SV
CLIENT REF:	
SCALE:	1:50 on (on A4 - Subject to pdf distortion)
DATE:	9 February 2016

Tree Survey Plan

APPENDIX 2



Nominal Root Protection Area (RPA) - also indicates potential encroachment of general building activity upon RPA)

Encroachment of proposed extension upon RPA

Where existing flags within RPA are to be removed - approx

Outline of proposed extension

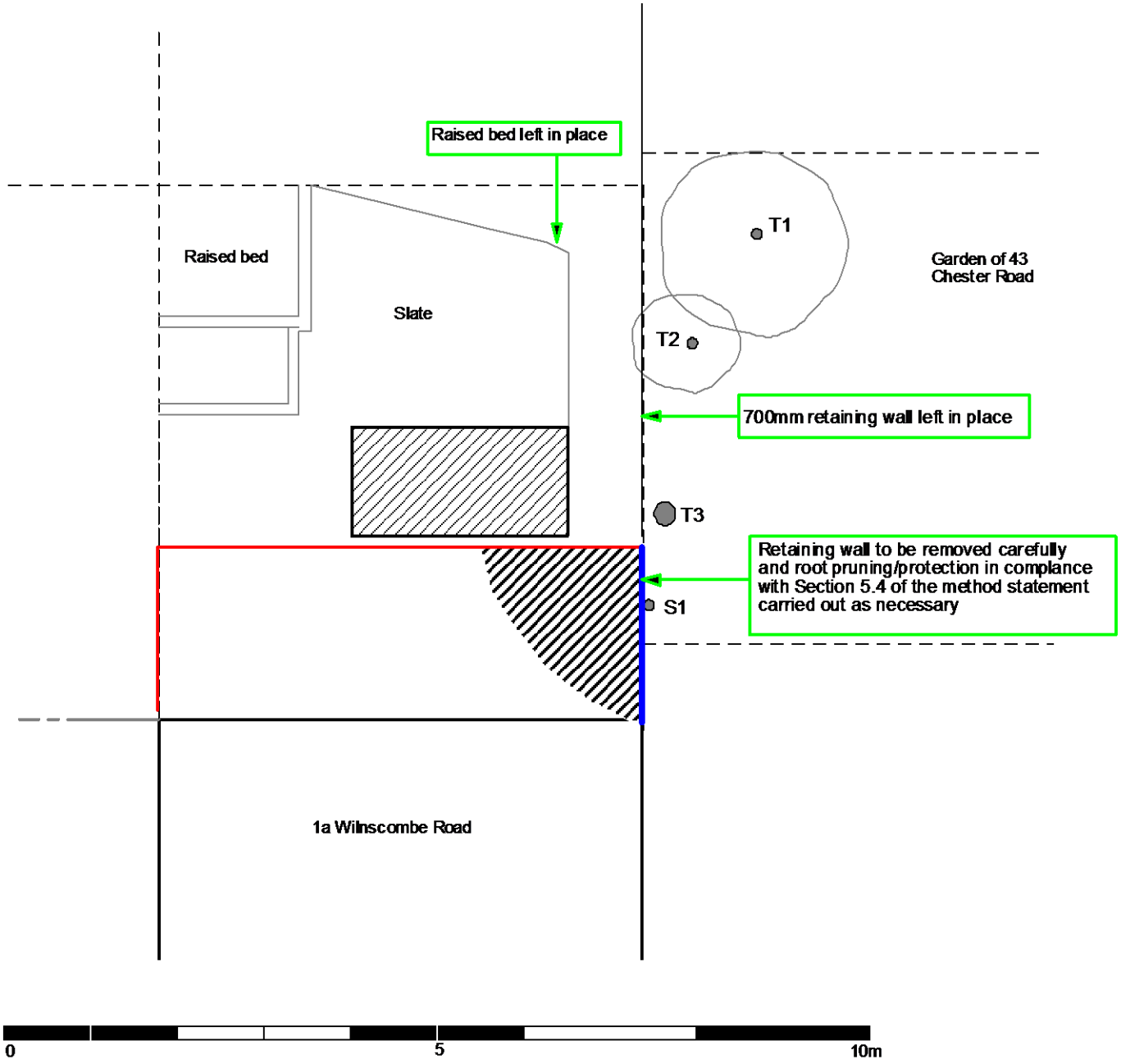
To be read in colour

OMC ASSOCIATES
T: 01223 842253
www.omc-associates.co.uk

SITE:	1a Wilnscombe Road, London N19
CLIENT:	Mr Frank Lampen
OUR REF:	1002RP
CLIENT REF:	
SCALE:	1:50 on (on A4 -Subject to pdf distortion)
DATE:	9 February 2016

Tree Constraints Plan

APPENDIX 3



Ground protection - sinle sheet of 2.4mx1.2m 12mm ply/shuttering placed over slate

Hand dig and root prune to up to 0.3m to accommodate reinforced floor slab and comply with methodology described in AMS Section 5.4 & 5.6

Outline of proposed extension

To be read in colour

OMC ASSOCIATES
T: 01223 842253
www.omc-associates.co.uk

SITE:	1a Wilnscombe Road, London N19
CLIENT:	Mr Frank Lampen
OUR REF:	1002 TP
CLIENT REF:	
SCALE:	1:50 on (on A4 -Subject to pdf distortion)
DATE:	9 February 2016

Tree Protection Plan

Category U (Coloured dark red on plan)

Trees in such a condition that they are unsuitable for retention.

- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).
- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality

Trees to be considered for retention on:

1 - Mainly arboricultural qualities and/or
2 - Mainly landscape qualities and/or
3 - Mainly cultural values, including conservation

Category A (Coloured bright green on plan)

Trees of high quality with an estimated remaining life expectancy of at least 40 years

- Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).
- Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
- Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)

Category B (Coloured blue on plan)

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years

- Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable
- defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.
- Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
- Trees with material conservation or other cultural value

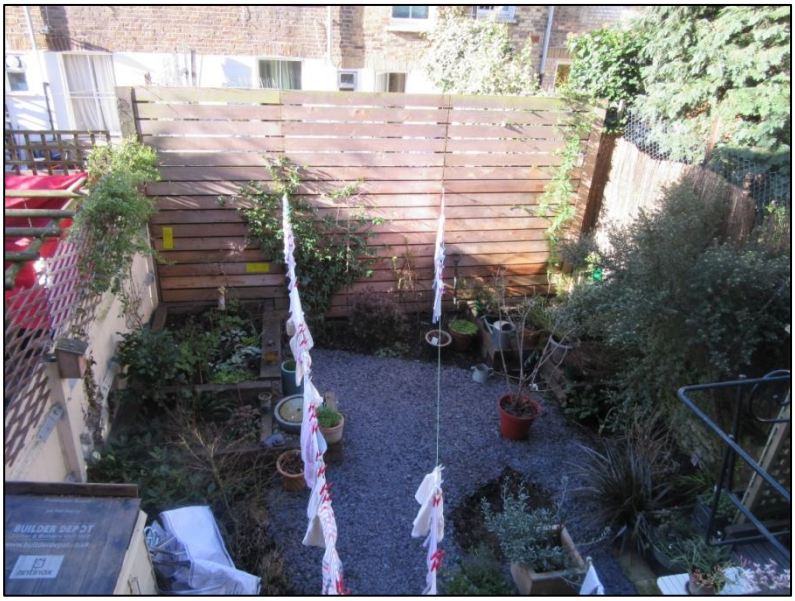
Category C (Coloured grey on plan)

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm

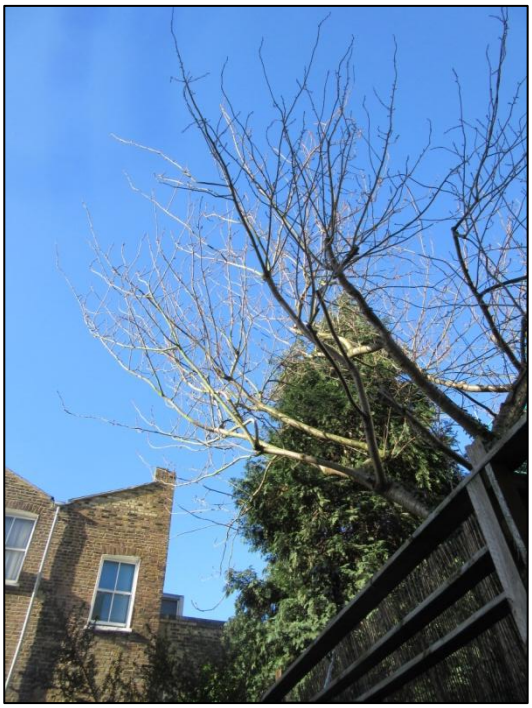
- Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.
- Trees with no material conservation or other cultural value.

T3 from flat, T1 & T2 in background

Rear yard



Overhang of T3



TREE NO.	SPECIES	IMPACT	RESOLUTION
T1	*Chamaecyparis lawsoniana* Lawson cypress	None	N/A
T2	*Chamaecyparis lawsoniana* Lawson cypress	None	N/A
T3	*Prunus cerasus* Sour Cherry	Partial encroachment of footprint upon RPA; removal of section of retaining wall	See 5.4, 5.6
S1	*Pyracantha* Spp. Firethorn	Possible encroachment of footprint upon RPA; removal of section of retaining wall	See 5.4, 5.6

APPENDIX 7 MONITORING SCHEDULE

ACTIVITY	DATE	PERSONNEL PRESENT	FURTHER INSPECTION REQUIRED?	OBSERVATIONS AND RECOMMENDATIONS
Remove section of retaining wall and excavate ground for floor slab				
Sign off				
Other				

Each stage as detailed above must be signed off by the Council's Arboricultural Officer prior to commencement of further stages.

Council Tree Officer: James Remmington (JR)
Site Manager: Frank Lampen
Arboriculturist: Chris Overbeke (CO)

Notes: