Sharon Hosegood
ASSOCIATES

ARBORICULTURAL METHOD STATEMENT REPORT

BS 5837:2012 '*Trees in relation to design, demolition, and construction*' - *recommendations*

ams

PURSUANT TO DISCHARGE CONDITION 5 OF 2015/2848/P

SITE: 25A Belsize Crescent

London NW3 5QY

CLIENT: Karen Bizon

SHARON HOSEGOOD
FICFor FArborA BSc (Hons) Tech Cert (ArborA)

DATE: 19 August 2015
OUR REF: SHA 077

Executive summary

This report provides information in accordance with the tree related planning condition for external alterations and single storey rear extension at 25A Belsize Crescent, London. All information provided is in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

The scheme can retain all trees, however two trees and one shrub are recommended for removal due to their unsuitability for retention. The blue Atlas cedar tree in the rear garden will be protected during works. The lime in the front garden will be pollarded back to original points. The only construction work near this tree is the replacement of the balustrade on top of the boundary wall.

A new tree will be planted in the rear garden to replace the eucalyptus.

The Blue Atlas cedar and the lime are an asset to the site and care has been taken by the design team to ensure their retention.

Contents

Appendices

1.0 Introduction

1.1 This report is for the purpose of providing information to comply with the requirements of planning condition 5. It is intended for submission to Camden Council and for use by the contractor on site. Technical words are highlighted grey and a description is in the glossary at appendix 8.

2.0 Statement of instructions and issues discussed

2.1 I was instructed by Rebecca Pike from Studio Pike on behalf of Karen Bizon on 13 August 2015 to carry out the following:

- A tree survey on all trees on site, and to make an assessment, where possible, of trees in neighbouring properties.
- An arboricultural impact assessment and provide any arboricultural method statements required.
- A tree protection plan and specification

All works are to BS 5837:2012 '*Trees in relation to design, demolition and construction – recommendations*' (BS).

2.2 The issues discussed are the condition of the trees on site, the impact from the approved development and the long term view of the treescape for the site.

3.0 The trees

3.1 *Generally*: There are 4 trees and 1 shrub subject of this survey. The trees are protected by virtue of being in a Conservation Area.

3.2 *Summary:* All trees could be retained by the scheme, however T1, eucalyptus is unsuitable for retention as it will quickly outgrow its situation, T2, willow leaved pear and S4, Oregon grape shrub are in a hazardous condition. The cedar will be protected during works and a new tree will be planted.

3.2 Details of the trees can be found in the tree survey sheets at appendix one. The tree survey plan (SHA 077 TSP) shows tree location, categorization and above and below ground constraints. The tree protection plan (SHA 077 TPP) shows trees to be removed, trees to be retained, the location of a new tree, tree protection fencing and areas where arboricultural

method statements apply. The tree surgery schedule at appendix 4 list works required to facilitate consent and also works for safety reasons and good arboricultural management.

3.3 T1 eucalyptus C

This tree is semi mature with a fair vitality. It is a tall, drawn up tree with a poor stem taper, which means that it will sway easily in the wind and whip against the building. The trunk twists at 2m up to 4m in a gentle helical pattern and there is a low, 'end loaded', branch on the south-west aspect. Eucalyptus is a very fast growing species and the tree will quickly outgrow the small space between the building and garden boundary. It is unsuitable for the location and the local landscape character. I recommend its removal, irrespective of the approved permission, as removing the tree in a few years' time would prove very complex in such a small space.

Photo 1 showing the poor stem taper

Photo 2 showing the helical twisting of the trunk

Arboricultural impact

The tree can be retained, but I have shown its removal due to unsuitability for the location. It will be replaced with a variegated privet tree, as detailed at appendix 9.

3.4 T2 willow leaved pear U

This tree has a longitudinal strip of decay from the base to the crown break. The fork between the main branches is cracked and there is a high probability that the tree will collapse. The tree is small and provides almost no visual amenity beyond the garden.

Photo 3 view of T2

Photo 4 showing the decayed strip

Arboricultural impact

The tree can be retained, but I have shown its removal due to its hazardous condition.

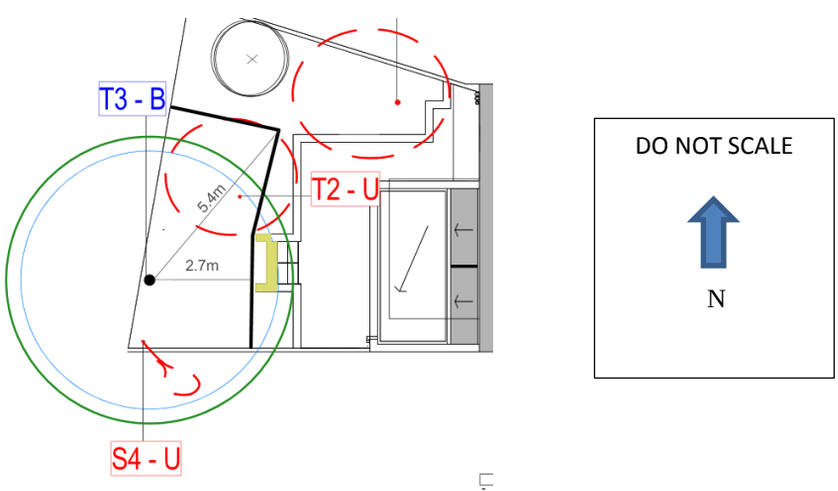
Photo 5 showing the crack in the fork between the main branches at the crown break

3.5 T3 blue Atlas cedar B1 and 2

This tree is in good health and early maturity. There are no minor defects, other than a small amount of twig-sized dead wood (typical for the species). The tree provides a focal point for the garden and will be dominant once mature. The root protection area equates to a circle with a radius of 3.6m.

Arboricultural impact

The tree will be retained and protected with tree protection fencing as shown on the extract of the plan SHA 077 TPP below:



The new steps impinge very slightly on the root protection area of the tree. This incursion is so modest (approximately 1 square metre on the very edge of the RPA) that I do not consider this to be harmful. As a precaution, the steps will be dug in accordance with the method statement at section 5.0.

Photo 6 of T3

3.6 S4 Oregon grape U

This is a decayed, heavily leaning shrub that should be felled irrespective of the approved development. It is of very little arboricultural and landscape consequence.

3.7 T5 lime B2

This lime tree is growing in the front garden of the property, close to a low rise boundary wall. It has been pollarded in the past and I understand that an application to re-pollard the tree has been made by the management company. I have included this work in the tree surgery schedule, together with removing the epicormic shoots, for completeness.

Arboricultural impact

Providing the lower section of the boundary wall is retained, the replacement of the decorative upper half of the wall with balustrades (or similar) will have no arboricultural impact. There are no other works within the root protection area of this tree. I recommend that the tree is re-pollarded every 4 – 6 years (depending on rate of growth). A Section 211 notice will be required each time the tree is re-pollarded.

Photo 7 of T5 lime.

4.0 The approved development and construction programme

4.1 Planning consent *'External alterations to lower ground floor flat including replacement of the existing conservatory with a single storey rear extension'* was granted on 3 August 2015 from Camden Council (Reference 2015/2848/P).

4.2 Planning condition 5 requires the following pre-commencement detail (summary)

'Details demonstrating how trees to be retained shall be protected during construction work shall be submitted to and approved by the Council in writing. Such details shall follow guidelines and

standards set out in BS5837:2012. All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage in accordance with the approved application details.'

4.3 This report analyses the impact of the approved development and recommends measures for tree protection to ensure that condition 5 is complied with.

5.0 Arboricultural method statement

5.1 Generally

Development can harm trees if not carried out carefully. Tree's crowns and trunks can be damaged by machinery or scorched by fire or chemicals. Trees roots can by asphyxiated and die if the rooting zone becomes compacted and the soil structure damaged. This can happen very easily, particularly on clay soils, even with the passage of light vehicles. Tree roots can be damaged by raising or lowering the ground level. In some cases it can take several years for the damage to become apparent. This report details how the approved development will take place whilst ensuring that the trees shown for retention can be protected, and for the protection of the soil in the areas for new planting.

5.1.1 *Fires:* Fires on site should be avoided if possible. If unavoidable, they should be situated far enough so that there is no risk of damage to the trees, taking into consideration the wind direction.

5.1.2 *Site and fuel storage, cement mixing and washing points:* All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage areas should be outside root protection areas unless otherwise agreed with the Local Planning Authority. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run off into Root Protection Areas.

5.1.3 *Temporary buildings for site use:* Site cabins, trailers and other temporary buildings can sometimes be used in root protection area if consent is agreed by the local planning authority. This can be very useful if there is a robust existing hard surfacing in place. The method for installing the buildings, and assessment of whether ground protection is needed is to be agreed with the

Arboriculturist and specified prior to installation. On this site I have assumed that the contractors will use the existing building as a site office and the existing car park to the south as contractors car park.

5.2 The following method statements are in chronological order:

5.3 Tree surgery

Recommendations for tree works can be found in the tree surgery schedule in Appendix 4. All works shall be in accordance with BS 3998:2010 Tree work. Recommendations'. The use of a competent tree surgery contractor is necessary to comply with this. The main contractor and tree surgery contractor must ensure that any necessary consents have been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works. Within root protection areas, stumps, shrubs and other vegetation must be removed by hand or using stump grinding machinery to minimize root damage of retained trees. Where poisoning of stumps is specified, this must be carried out by competent operatives. Only chemicals approved for this purpose and used in accordance with the manufacturer's instructions will be used.

5.4 Tree protection during works

The tree protection fencing is to be erected in the locations shown on the tree protection plan (appendix 2) to a specification found at appendix 3. The fencing is to be erected before any work site.

5.5 Installation of the steps near T3

The area to which this applies is shown by dull yellow areas on the tree protection plan SHA 077 TPP. The purpose of the method statement is to ensure that tree roots on the outer edge of the root protection area are cut cleanly so that they can regrow (albeit re-directed away from the steps) and that the ends of the cut roots are not scorched by the alkalinity of concrete.

The steps will be hand dug and any roots found will be cut cleanly with bypass secateurs. The edge of the trench will be lined with impermeable plastic sheeting to prevent the alkalinity of

concrete from scorching roots. The plastic sheeting should not be visible from the ground once the steps are installed.

It would be beneficial to the tree to top dress the area under the crown (within the garden) with 50mm of composted bark or wood chip. This will be aesthetically pleasing, enrich the soil and therefore benefit the tree. This is advisory only, and not a formal recommendation. Consideration could also be given to logging up the trunk of the willow leaved pear into 30cm sections and placing under the Cedar tree as a habitat pile (no more than 60cm high).

6.0 Conclusions

That provided the methods in this report are followed on site, there will be no adverse arboricultural impact and that the information in this report is sufficient for the requirements of condition 5. The removal of T1, T2 and T4 are recommended due to their unsuitability for retention.

7.0 Recommendations

7.1 That a copy of the report, including the site specific method statements and tree protection plan is kept on site at all times and is part of the site induction and is sent to the contractor.

7.2 That the arboricultural method statements are observed by all site personnel.

7.3 That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted.

7.4 That there are no ground level changes with the area shown on the plan by tree protection fencing.

7.5 That the eucalyptus is replaced with a variegated privet tree (Ligustrum lucidum variegated) in the first available planting season after completion of the works.

7.6 That no tree works take place until the conditions are discharged

7.7 That the tree protection fencing is installed before machinery enters the site and remains in place until the soft landscaping stage.

7.8 That the steps edged dull yellow on the tree protection plan near T3 Blue Atlas cedar are hand dug in accordance with the method statement.

Sharon Hosegood FICFor FArborA BSc (Hons) Tech. Cert. (Arbor A)

Director
Sharon Hosegood Associates Ltd

Appendix 1

Tree survey sheets

Sharon Hosegood ASSOCIATES

25a Belsize Park

Tree/Group Number	No. of Trees	Species	Height (m)	Stem diameter	No. of Stems	Spread N (m)	Spread E (m)	Spread S (m)	Spread W (m)	Crown Cleanrance (m)	Life stage	Condition	Recommendations	RPA (m^2)	RPR (m)	Life	BS Category
Tree T1	1	Eucalyptus *Eucalyptus gunnii*	15.0	14	1	2.0	1.0	1.5	3.0	2.5	Semi Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Base / stems obscured - Vegetation. Deadwood - Minor. End-loaded limb / limbs. Form - Poor crown structure. Leaning trunk - Minor. Rubbing limbs. Unbalanced crown - Minor. Tall drawn up tree with a poor stem taper. The trunk twists at 2m up to 4m in a gentle helical pattern. Over extended branch on south west aspect. Unsuitable for the location as it will become too large for the space.	Fell - Ground level.. Stump - Remove / grind..	8.9	**1.7**	**20-40**	C2
Tree T2	1	Willow-leaved pear *Pyrus salicifolia*	4.0	9	1	2.2	1.6	1.0	2.0	2.0	Early Mature	Structural condition Poor. Physiological condition Fair. Competition - Adjacent vegetation. Deadwood - Minor. Fork - Cracked. Rubbing limbs. Sheltered crown. Shedding limb / limbs - Historic. Short remaining contribution. The trunk has a longitudinal strip of decay from the base to the crown break, and is likely to collapse	Fell - Ground level.. Stump - Remove / grind..	3.7	**1.1**	**0-10**	U

Stem	grey	estimated value
Stem	AVE	average stem diameter for multi-stemmed trees

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Tree/Group Number	No. of Trees	Species	Height (m)	Stem diameter	No. of Stems	Spread N (m)	Spread E (m)	Spread S (m)	Spread W (m)	Crown Cleanrance (m)	Life stage	Condition	Recommendations	RPA (m^2)	RPR (m)	Life	BS Category
Tree T3	1	Blue Atlas cedar *Cedrus atlantica 'Glauca'*	11.0	30	1	4.0	4.0	4.0	4.0	2.5	Early Mature	Structural condition Good. Physiological condition Good. Deadwood - Minor. Ivy or climbing plant. Rubbing limbs. This is an attractive tree tha provides a feature at the end of the garden.	Climbing plant - Sever and strip.. Deadwood - Remove..	40.7	**3.6**	**40+**	B1/B2
Shrub S4	1	Oregon grapes *Mahonia aquifolium*	3.0	7	1	0.0	0.0	1.5	1.5	1.0	Post Mature	Structural condition Poor. Physiological condition Fair. Crack - Longitudinal / shear crack. Decay / structural defect - Extensive. Leaning trunk - Major. This shrub leans at 45 degrees over the boundary wall.	Fell - Ground level..	2.2	**0.8**	**0-10**	U
Tree T5	1	Common lime *Tilia x vulgaris*	10.0	35	1	3.0	3.0	3.0	3.0	2.0	Early Mature	Structural condition Fair. Physiological condition Good. Dense crown. Decay / structural defect - Localised. Decay / structural defect - Minor. Epicormic growth - Base. No significant faults observed. Pollard - Regrown.	Epicormic growth - Remove.. Pollard - Previous pollard height..	55.4	**4.2**	**40+**	B2

Stem	grey	estimated value
Stem	AVE	average stem diameter for multi-stemmed trees

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Table 1 of BS5837 (2012) **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	* 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 health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7*			RED
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Tree 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 arboricutural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
Category B **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	BLUE
Category C **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	GREY

Appendix 2

Tree survey plan SHA 077 TSP

Tree protection plan SHA 077 TPP

T1 - A Category A - high quality and value

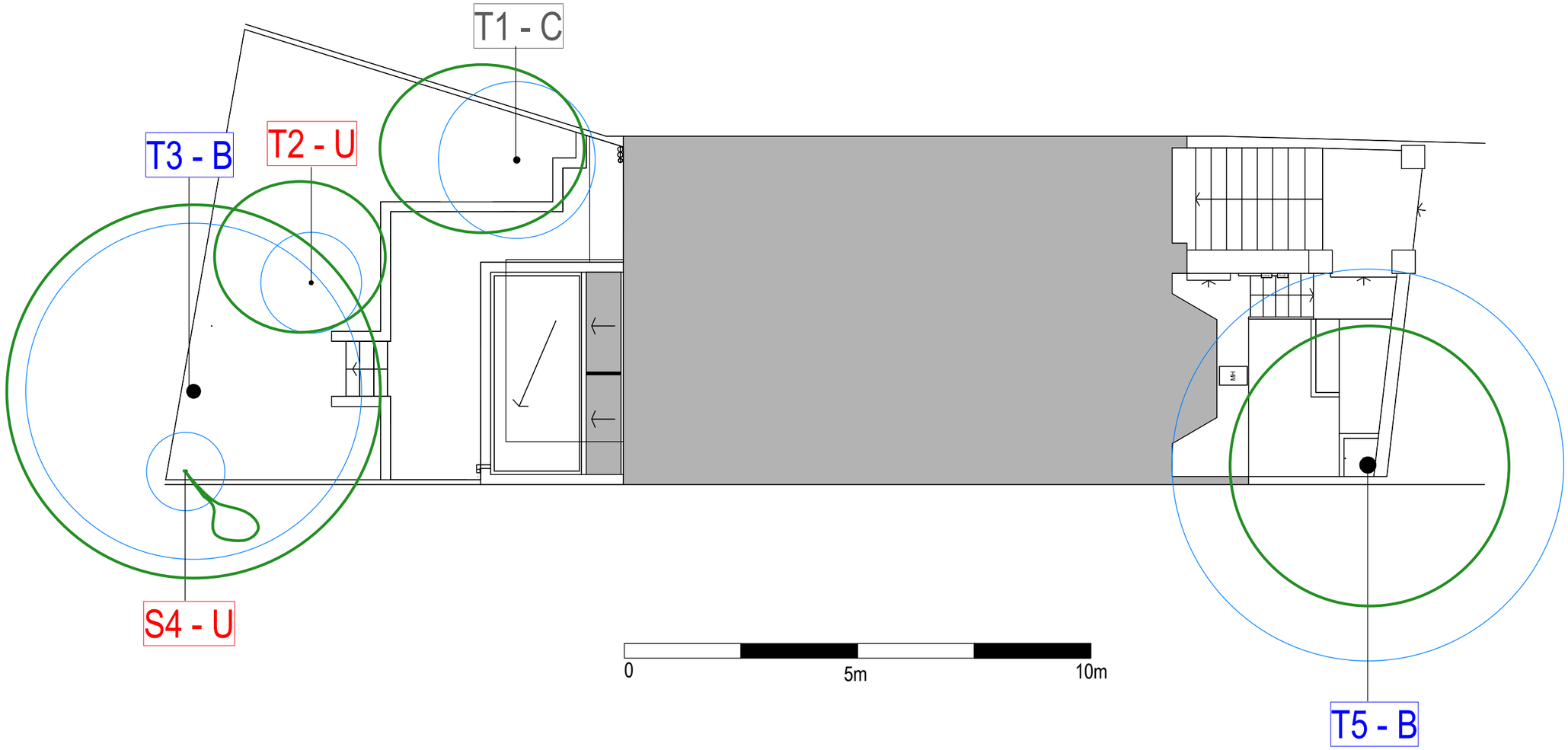
T1 - B Category B - moderate quality and value

T1 - C Category C - low quality and value

T1 - U Category U - unsuitable for retention

Crown spread

RPA - root protection area
as defined by Table 2
BS 5837:2012



Notes

1. Contractors to check all dimensions on site
2. Discrepancies must be reported to the Arboricultural Consultant before proceeding
3. The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
4. It is the responsibility of the contractor to ensure necessary consents for tree works are in place
5. This drawing is copyright © Sharon Hosegood Associates Ltd

Rev :	Description :	Authorized :

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Site Address

25A Belsize Park, London

Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMH
Date	**Drawing Number**	**Scale**	**Drawing Status**
19.08.15	SHA 077 TSP	1:100@A3	For Issue

Revision

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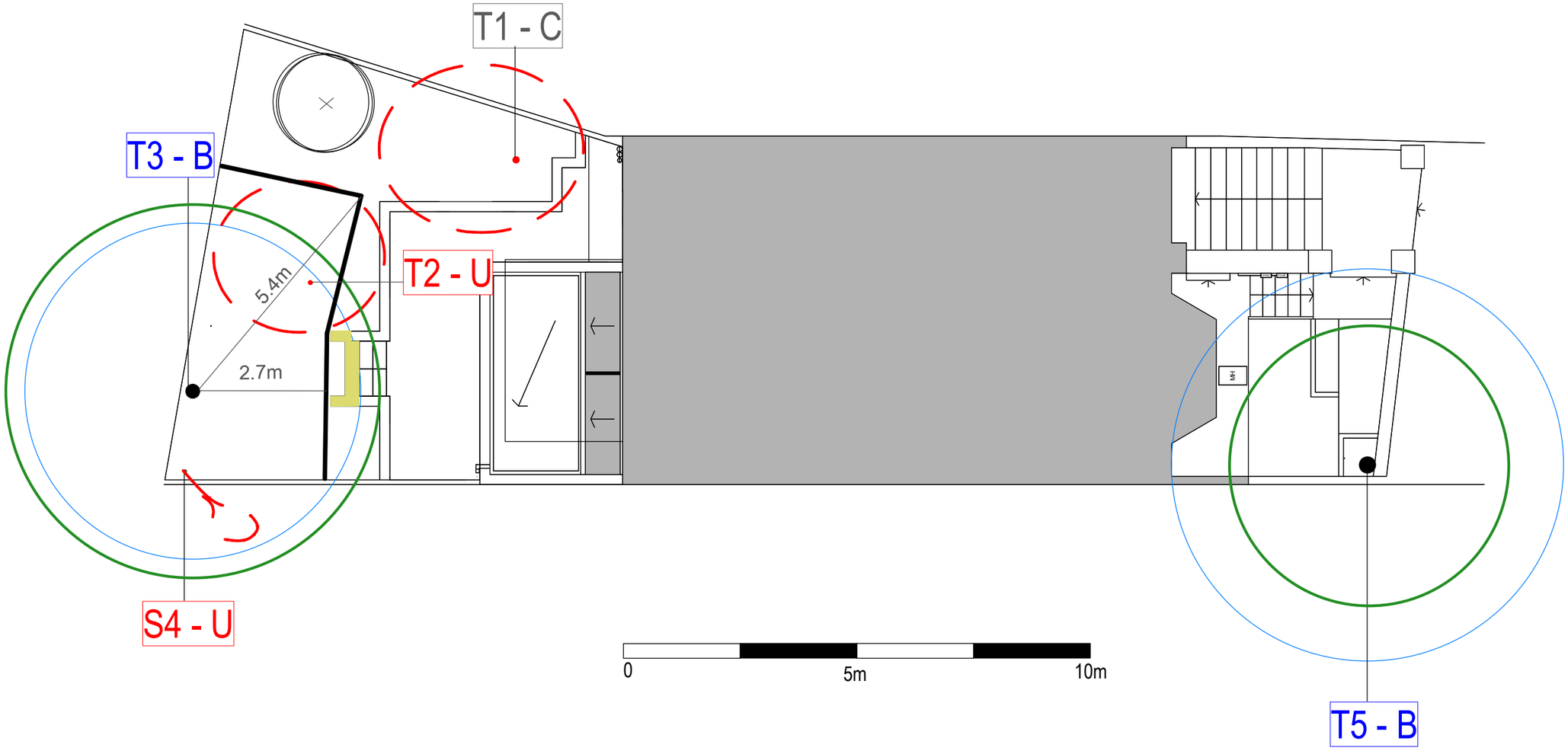

T1 - A Category A - high quality and value

T1 - B Category B - moderate quality and value

T1 - C Category C - low quality and value

T1 - U Category U - unsuitable for retention

Crown spread

Trees to be removed

Tree protection fencing comprising Heras panels for construction phase - 3 panels

1 x Ligustrum lucidum Variegata 45 litre container

Area to which method statement applies

Notes

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Site Address

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Drawing Title	Orientation	Drawn	Authorized
Tree Protection Plan		ND-H	SMH

Date	Drawing Number	Scale	Drawing Status
19.08.15	SHA 077 TPP	1:100@A3	For Issue

Revision

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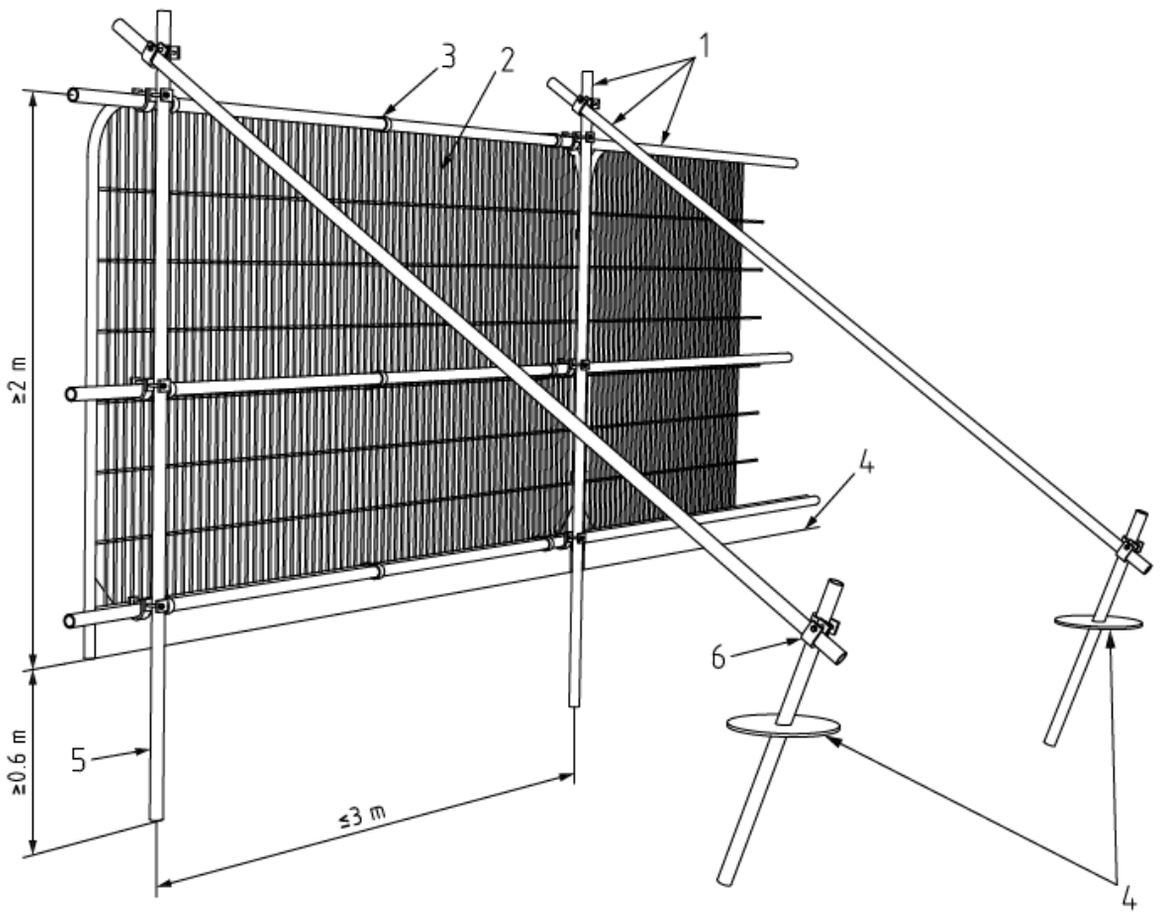
Appendix 3

Tree protection specification

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Tree protection fencing specification from BS 5837:2012 Figure 2

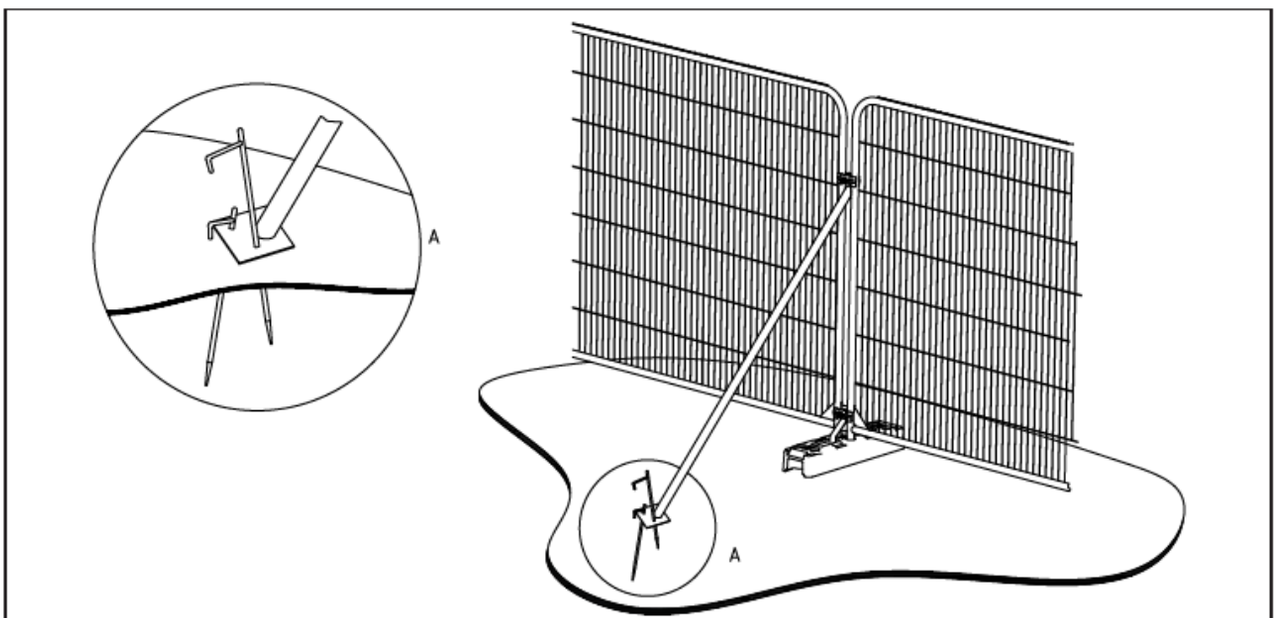
Section 6.2.2 of BS.

Barriers should be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees(s). Barriers should be maintained to ensure that they remain rigid and complete.

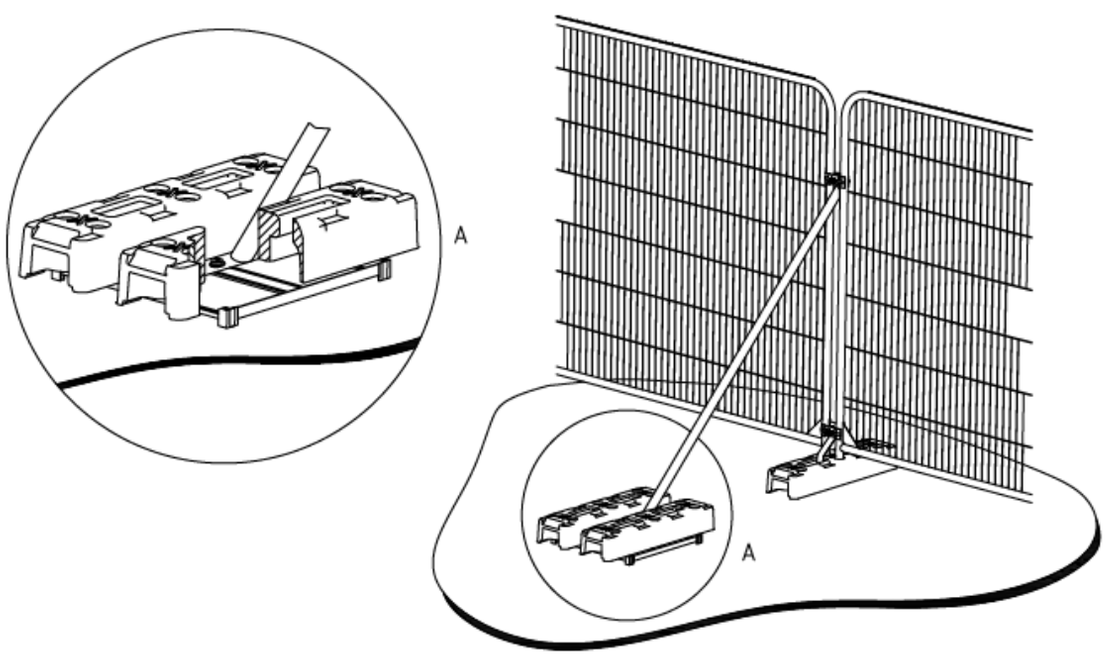
The default specification is shown above at Figure 2. Care should be taken when locating the vertical poles to avoid underground services and structural roots. Where it is not possible to drive a pole into the ground, for example on hard surfacing, figure 3 overleaf, applies.

The location for the tree protection fencing is shown on the tree protection plan delineated by a black dashed line. The location of the fencing is out the outer edge of the root protection area and the dimensions from fixed points are shown on the drawings. All weather signs should be affixed to the barriers, no more than 12m apart. This forms the construction exclusion zone.

Figure 3 Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Suggested site warning sign format

Appendix 4

Tree surgery schedule

Tree surgery schedule

All works to be carried out in accordance with BS 3998:2010 'Tree works – Recommendations'.

All pruning cuts to be made at suitable growing points in line with the principles of 'Natural target pruning' to the branch collar.

Tree no.	Species	Proposed works	Reason
T1	Eucalyptus	Fell to ground level and remove stump	This tree is unsuitable for its location as it will quickly outgrow the space. It has a tall, drawn up form with a poor stem taper.
T2	Willow leaved pear	Fell to ground level and remove stump	This tree has a longitudinal strip of deep decay from the base to the crown break. The main branch union is also splitting. There is a probability of tree failure.
T3	Blue Atlas cedar	Remove dead wood with a diameter greater than 25mm and remove the climber.	Good arboricultural practice but essential work.
T4	Oregan grape	Fell to ground level and remove stump	This tree has a longitudinal strip of deep decay from the base on the top of the trunk. The bush leans at 45 degrees over the garden wall and hangs over the neighbouring property.
T5	Lime	Remove epicormic shoots from the base Pollard back to previous pollard points	Good arboricultural practice to continue established management *I understand that this matter is already being addressed with Camden Council. Previous decision 17-09-2002 (TCX0206762*

Appendix 5

Statement of methodology and reference material

Statement of methodology

Review of architects plans

Survey carried out on 18 August 2015

TPO check with Camden Council 19 August 2015

Tree survey using Visual Tree Assessment carried out in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS). All investigations were from ground level only and binoculars were used when necessary. All trees with a trunk diameter of 75mm or above were surveyed. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS and include species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C). Full details of the trees are found at appendix one, and the plans at appendix two.

Received material

1503_CONISBEE DRAFT TENDER_150731, 1503_GA101, 1503_PLANNING SET_150727, Planning permission_25a Belsize Crescent

Reviewed documents and text

BSI. BS 3998:2010 *Tree work-Recommendations*.

BSI. BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*

Appendix 6

Caveats

Specific report caveats

1. At the time of writing this report, the protected tree status is correct. However, this can change. Therefore I advise that a further check is made with the Camden Council before any works to trees takes place.
2. No internal diagnostic equipment was used other than a sounding mallet and probe and all inspections where from ground level only, with the aid of binoculars where necessary.
3. The survey is concerned solely with arboricultural issues.
4. Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
5. As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
6. Only the trees listed in this report have been examined.
7. A full inspection of the structural condition of T5 could not be made due to the dense epicormic growth.

Appendix 7

Tree related legislation affecting the site

Tree preservation orders

The Town and Country Planning (Tree Preservation) (England) Regulations 2012. There are no tree preservation orders affecting the site (checked with Camden Council on 19 August 2015).

Conservation Area

The site is in Belsize Park Conservation Area. This means that six weeks' notice (a 'Section 211 Notice') must be sent to Camden Council before tree works. Works listed in this report do not need to be separately applied once this report is approved.

Ecological considerations

The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

Occupiers Liability Act 1957 and 1984

The Occupiers Liability Act (1957 and 1984) places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore this report includes recommendations within the tree tables for work required for safety reasons. 'Common sense risk management of tree (National Tree Safety Group 2012)' states that *'The owner of the land on which a tree stands, together with any party who has control over the tree's management, owes a duty of care at Common Law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property'*.

Common law enables pruning back to the boundary line providing the work is reasonable.

Appendix 8

Glossary

Arboriculture	Formerly all aspects of the culture of trees, especially for forestry. Latterly, the art and science of cultivating and managing trees as groups and individuals, primarily for amenity and other non-forestry purpose.
Arboricultural method statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience in the field of trees in relation to construction.
Bark	A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm.
Branch	A limb extending from the main stem or parent branch of a tree.
Branch bark ridge	The raised arc of bark tissues that forms the acute angle between a branch and its parent stem
Branch collar	The swelling or roughened bark often found at the base of a branch which should be left intact if the branch is to be pruned off.
Column	In the wood or phloem of a tree, an axially elongated zone of tissue that is distinguished form the surrounding tissue; e.g. Live verses dead or decayed versus non-decayed.
Construction exclusion zone	An area based on the root protection area from which access is prohibited for the duration of the project.
Containerised tree	Tree grow using containerizing nursery production system.
Crown	In arboriculture, the main foliage-bearing portion of a tree.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.
Epicormic	Pertaining to shoots or roots which are initiated on mature woody stems; shoots can form tin this way from dormant buds or they can be adventitious.
Failure	In connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil.
Hazard	A thing, a process or a potential event that has the potential to cause harm.
Independent in the landscape	Point at which a newly planted tree is no longer reliant on excessive or abnormal management intervention in order to grow and flourish with realistic prospects of achieving its full potential contribute to the landscape.
Mulch	Material laid down over the rooting area of a tree or other plant to help conserve moisture, suppress weeds and encourage a beneficial microflora.

Pollard	A term for a pollarded tree
Pollarding	The complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches; also, further cutting to maintaining this growth pattern.
Probability	A statistical measure of the chance that a particular event (e.g. a specific failure of a tree or specific kind of harm to persons or property) might occur.
Risks	The likelihood of the potential harm from a particular hazard becoming actual harm.
Root protection area	A layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS 5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*.
Tree Preservation Order	In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.
Tree protection plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposal, showing trees for retention and illustrating the tree and landscape protection measures.
Vitality	In tree assessment, an overall appraisal of physiological and biomechanical processes, in which high vitality equates with near-optimal function, in which high vitality equates with healthy function.
Visual Tree Assessment (VTA)	In addition to the literal meaning, a system expounded by Matteck and Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.
Wound	Injury caused to a tree by a physical force.

Appendix 9

Planting specification

Plant specification

All plant stock, plant handling and planting to be undertaken in accordance with the following British Standard Specifications and Code of Practice:

BS 3936: 1992 Part 1 Nursery Stock. Specification for Trees and Shrubs

BS 4428: 1989 Code of practice for general landscape operations (excluding hard surfaces)

BS 8545: 2014 Trees from nursery to independence in the landscape. Recommendations.

Plant stock

Plant stock to be supplied in accordance with the size and description specified on the plant schedule. Plant stock shall be healthy, vigorous, and free from pests and diseases and suitable hardened off for the proposed situation of planted, and lifted at a time in accordance with good nursery practice. Stock shall have a well formed fibrous root system and be free from perennial weeds.

All young trees should have a clearly defined strong leader. All lateral branches should be subordinated to the leader and should never be more than 25% of the diameter of the main stem at the branch union. All formative pruning wounds should exhibit healthy and continuous bark occlusion with all pruning cuts made leaving he branch collar clearly visible and intact on the main stem. All branches which are poorly attached, are inward growing or cross and rub other branches should be removed or subordinated to the central stem. All young trees should exhibit a clearly defined stem taper appropriate to the species and evident from crown tip through to foot flare. All young trees should have a proportionate and balanced height/stem girth ratio appropriate to the species. At the point of dispatch call trees should being wholly self-supporting and free from any extraneous canes or ties in the crown.

Plant handling

All plant materials shall be lifted, bundled, labelled, packaged and transported, temporarily stored and planted in accordance with the procedures and methods illustrated in the publication 'Plant Handling' (Horticultural Trades Association).

Trees

1 variegated tree privet – Ligustrum lucidum variegata

Heavy standard 3 – 4m high in a 45 L pot (a containerized tree)

Image courtesy Barcham Trees

The tree is to be planted in a tree pit 1m square and 500mm deep. Before digging, a check must be made by the contractor to make sure that there are no underground services or hazards under the pit. The excavated soil is to be temporarily stored on tarpaulin and the top soil and sub soil separated. The pit is to be square in shape and the sides roughened with a fork. Two peeled sweet chestnut stakes are to be driven into the hole, far enough apart to accommodate the container tree root ball. For the light standard trees only one stake per tree is needed. The tree container will be removed and the trees placed carefully in the hole up to the nursery mark. A proprietary tree fertilizer to be added. The soil is to be added in and backfilled. The pits are to be filled up to ground level. The stakes will be attached to the trunk at a height not greater than one-third of the trunk by a proprietary rubber sling system. The rubber sling should be tight enough to secure the tree, whilst allowing for some swaying to develop a good root flare.

The tree is to be mulched with 75mm deep composted wood chip or bark chippings around the tree to achieve a circle with a diameter of 1m. The tree is to be watered to field capacity (wet enough to fully dampen the soil, but not to form a puddle).

All nursery tags and any snapped twigs to be removed.

Maintenance

An area of 1m clear diameter must be kept clear of weeds and grass and the mulch to be topped up twice a year for three years.

Loosen the tree slings once a year (dependent on rate of growth) and remove, along with the stakes, once the tree is independent in the landscape (normally after 3 – 5 years).

Water weekly to field capacity between April – September. If the water does not drain away within 10 minutes, then it is overwatered.

Remove any dead, defective of broken branches.

If the tree dies, replace in the first available planting season.

Appendix 10

My experience and qualifications

Sharon Hosegood

FICFor FArbor A BSc (Hons) Tech Cert Arbor A

Profile

Sharon is an Expert Witness, chartered arboriculturist and Director of Sharon Hosegood Associates Ltd. Sharon had eleven years experience as a local government tree and landscape officer before joining DF Clark Contractors as a tree consultant in 2005. In 2007 she formed an environmental practice in Essex with the owner. As managing director, she built up the ecological and arboricultural consultancy to a team of 20. She is a regular presenter and an occasional trainer for Trevor Roberts Associates. She appeared on BBC1 television in 'Britain Beneath Your Feet' in July 2015 demonstrating tree radar at the Burghley Country Park, Lincs, with Dallas Campbell.

Specialities:	Trees in relation to development, including appeals and planning hearings Tree root investigations, including TreeRadar Tree hazard evaluation Tree preservation orders Trees and well-being with community engagement
Professional bodies:	Fellow of the Institute of Chartered Foresters (ICF) Councillor for the ICF East England ICF regional committee Assessor for the ICF examination board Fellow of the Arboricutural Association
Qualifications:	Cardiff University Law School Bond Solon Civil Expert Certificate Arboricultural Associations Technicians Certificate BSc (Hons) Geography and Landscape Studies
Awards:	Top student award for the Technician's certificate in 2005 The Broomfield Hospital Woodland Management project she has managed since 2009 has won the following awards: • The Essex Biodiversity Awards (nomination) • The Excellent Community Engagement Award (NHS Forest) • Green Flag and Green Apple Award • Highly commended for the Health Sector Journal Award 2013

Sharon Hosegood
ASSOCIATES

PURSUANT TO DISCHARGE CONDITION 5 OF 2015/2848/P

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CLIENT: Karen Bizon

SHARON HOSEGOOD
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DATE: 19 August 2015
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