Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

report

SITE

145 - 147 Camden Road,
London
NW1 9HA

CLIENT

Paul McAneary Architects on behalf of Harry Motors Ltd

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

DATE: 16.03.16
OUR REF: SHA 153

Executive summary

This report is submitted in connection with a planning application to retain the existing car repair garage use on ground floor and to create a new five storey block of offices (use class - B1), which would create office units at First to Fourth Floor level at 139 - 147 Camden Road, London NW1 9HA. I have provided all information in accordance with the British Standard (BS 5837: 2012 '*Trees in relation to demolition, design and construction – recommendations*' (referred to as BS).

There are no trees on site, however there are five important whitebeams growing in Cantelowes Gardens. The nearest tree (T1), overhangs the site slightly. The roots of the tree are constrained by the foundations of the boundary wall. If there are roots below the foundations, the large inspection chambers 1m beyond the wall act as a root barrier.

As a precaution the wall near T1 will be demolished in accordance with an arboricultural method statement, under supervision, to ensure that any roots growing up to the wall are protected. Due to the barrier effect of the wall, it is unlikely that there will be very few roots on site. Those roots that are on site will be stopped by the inspection chamber 1m away from the wall. Nevertheless, the foundation will be constructed under supervision where indicated on the tree protection plan. The tree protection fencing will be set back towards the tree (subject to permission from the parks department). In order to allow for scaffolding, the ground will need to be protected between the fences and scaffold, and light crown pruning is required on this side. This new crown profile will need to be maintained.

Providing the methods described in this report are followed, there should be limited arboricultural impact from the proposed scheme.

Contents

Appendices

1. Introduction:

1.1. This report supports a planning application to the London Borough of Camden for planning application to retain the existing car repair garage use on ground floor and to create a new five storey block of offices (use class - B1), which would create office units at First to Fourth Floor level at 139 - 147 Camden Road, London NW1 9HA.

1.2. This report details tree condition, the impact of the proposal on, and from, the existing trees and the measures taken to protect trees to be retained. It also includes tree surgery recommendations.

1.3. The survey has resulted in a layout as shown in the tree protection plan at Appendix 3. Where technical terms are used, the words are in grey and explanations are found in the glossary.

2. Statement of instructions and the issues addressed:

2.1. I was instructed by Tommaso Cuni of Paul McCaneary Architects, on 12th February 2016, to:-

2.1.1. Carry out a tree survey in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS);

2.1.2. Analyse the proposals and the impact on trees to be retained;

2.1.3. Produce a tree protection plan, showing the location of the fencing in accordance with the BS and a specification for the protection of the existing trees;

2.1.4. Provide a tree surgery schedule which includes work to facilitate construction, based on the layout of, and works to, trees due to their condition or previous management;

2.1.5. Provide arboricultural method statements in as much detail as is practical at this stage.

2.2. The issues addressed are the condition of the trees in the park nearest the proposal and the potential of the nearest tree to be affected by the proposal.

3. The site:

3.1. The site is a car repair garage at, 139-147 Camden Road, London NW1 9HA. This report particularly relates to the north-eastern section of the site next to Cantelowes Gardens. This part of the site is laid to concrete and there are two 2.5m deep inspection chambers (3 x 4m) 1m from the boundary. The site is flat and the boundary is enclosed by a brick wall approximately 1.8m high.

3.2. Cantelowes Gardens is a large green space beside Camden Road. There are five whitebeams equidistantly planted 5m from the pavement. I agree with the tree officer's opinion that *'the whitebeams make an important contribution to character of the park and form an important buffer from the busy road.'* (*Source:- pre-application meeting report dated 10.6.2013*).

Photo 1 of T1 – T5 from Camden Road

4. The trees:

4.1. *Generally:* There are 7 trees which form the subject of this survey, all growing in Cantelowes Gardens, and under the control and management of Camden Council. Full details are found in the survey sheets at appendix 1 and their location on the tree survey plan at appendix 2.

4.2. The trees are not protected by a tree preservation order or within a Conservation Area.

5. The Proposal

5.1 The planning application intends to retain the existing car repair garage use on Ground Floor and to create a new five storey block of offices (use class - B1), which would create office units at First to Fourth Floor level at 139 - 147 Camden Road, London NW1 9HA.

6. Arboricultural impact assessment:

6.1. *All trees will be retained.* Care will be needed when carrying out works near T1, the whitebeam nearest the site.

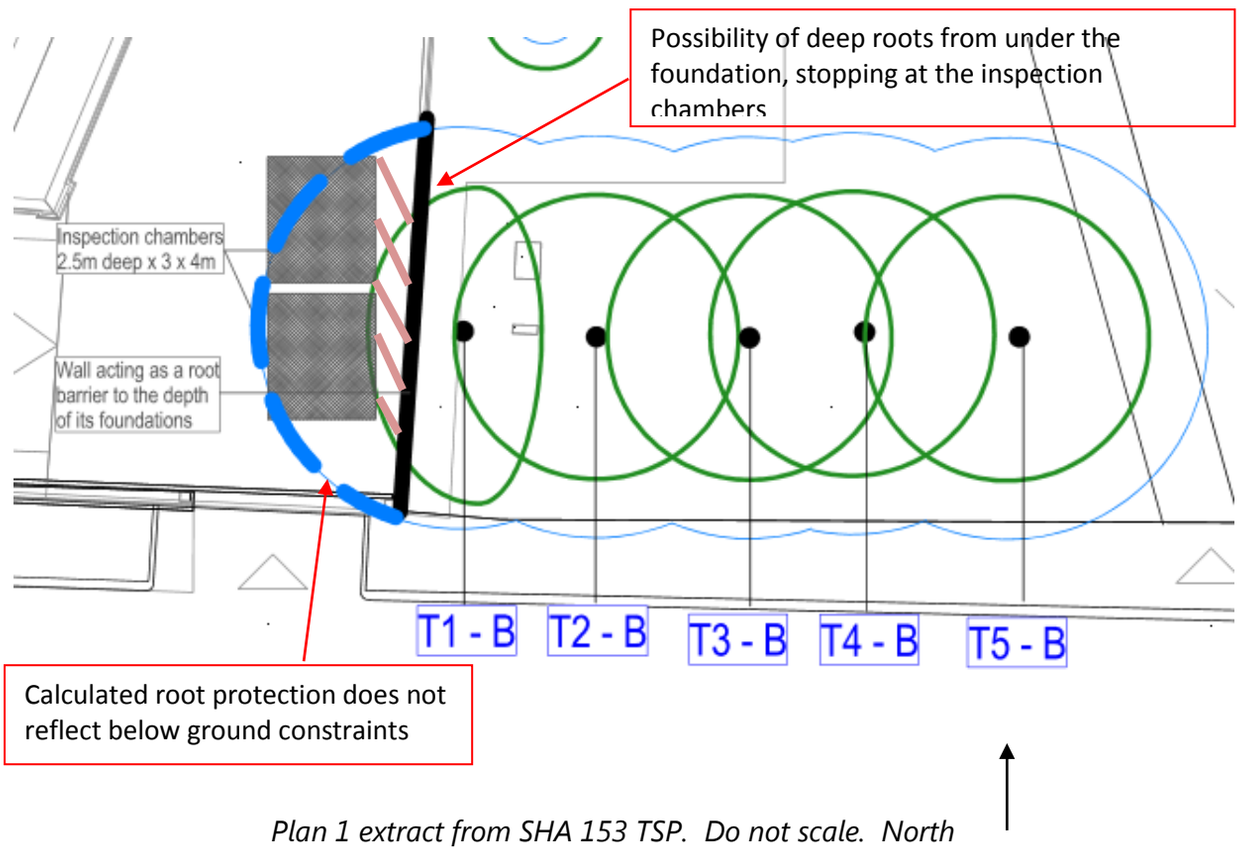
6.2. *Comments on specific trees and the arboricultural impact*

T1 whitebeam

This tree is nearest the site and is slightly shorter than the rest of the group. It has been cut back on the site side in the past, and has an asymmetric crown, it being so close to the neighbouring tree. The tree has a good vitality with no obvious signs of pest and disease. It has re-grown from the pruned branches with a typical vigour for the species. It is growing 1.5m from a boundary brick wall (approximately 1.8m high). This wall is likely to have foundations at least 600mm deep, probably deeper. The foundations will be acting as a root barrier at least to the depth of the foundations. There may be tree roots under the foundations into the site. However, I noticed entry points to inspection chambers at the site (see photo 3) visit and discussed this with the client. There are two chambers 2.5m deep with dimensions 3 x 4m. The chambers are 1m from the wall at the closest point. These two chambers will definitely be acting as a root barrier, and there will be no roots beyond or underneath the chambers growing towards the site.

Tree roots grow where their requirements for oxygen, water, organic matter and a permeable rooting environment are met. Whilst trees do root under hard surfaces, roots will preferentially grow where these conditions are more easily met. The park meets these requirements and therefore I consider it highly probable that the majority of the roots are in the park, with only a few deeper roots possibly passing under the wall's foundations, and stopping at the inspection chamber.

The calculated root protection area, shown in the tree survey plan SHA 153 TSP cannot indicate the actual rooting area, as indicated on the plan extract below:



Plan 1 extract from SHA 153 TSP. Do not scale. North

In my experience, there are probably roots growing up to the wall and tracking down the foundations, as roots flourish on the condensation layer that forms, due to the temperature differential between soil and brick.

Photo 2 of T1 looking from Camden Road

Pruned branches are shown arrowed

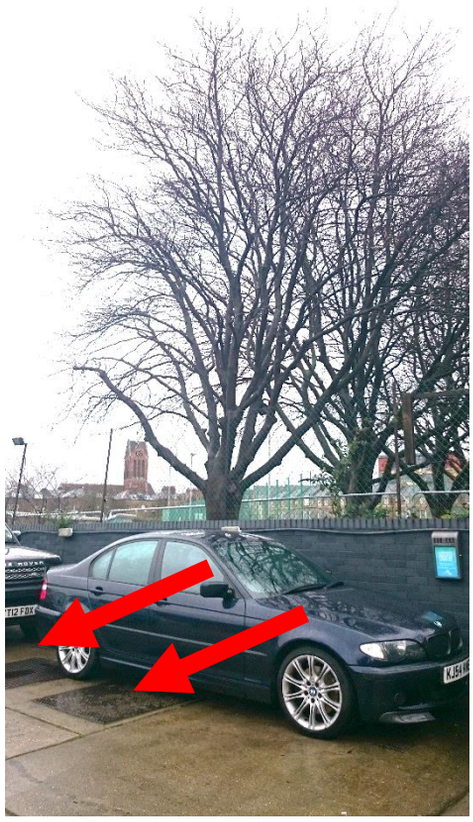


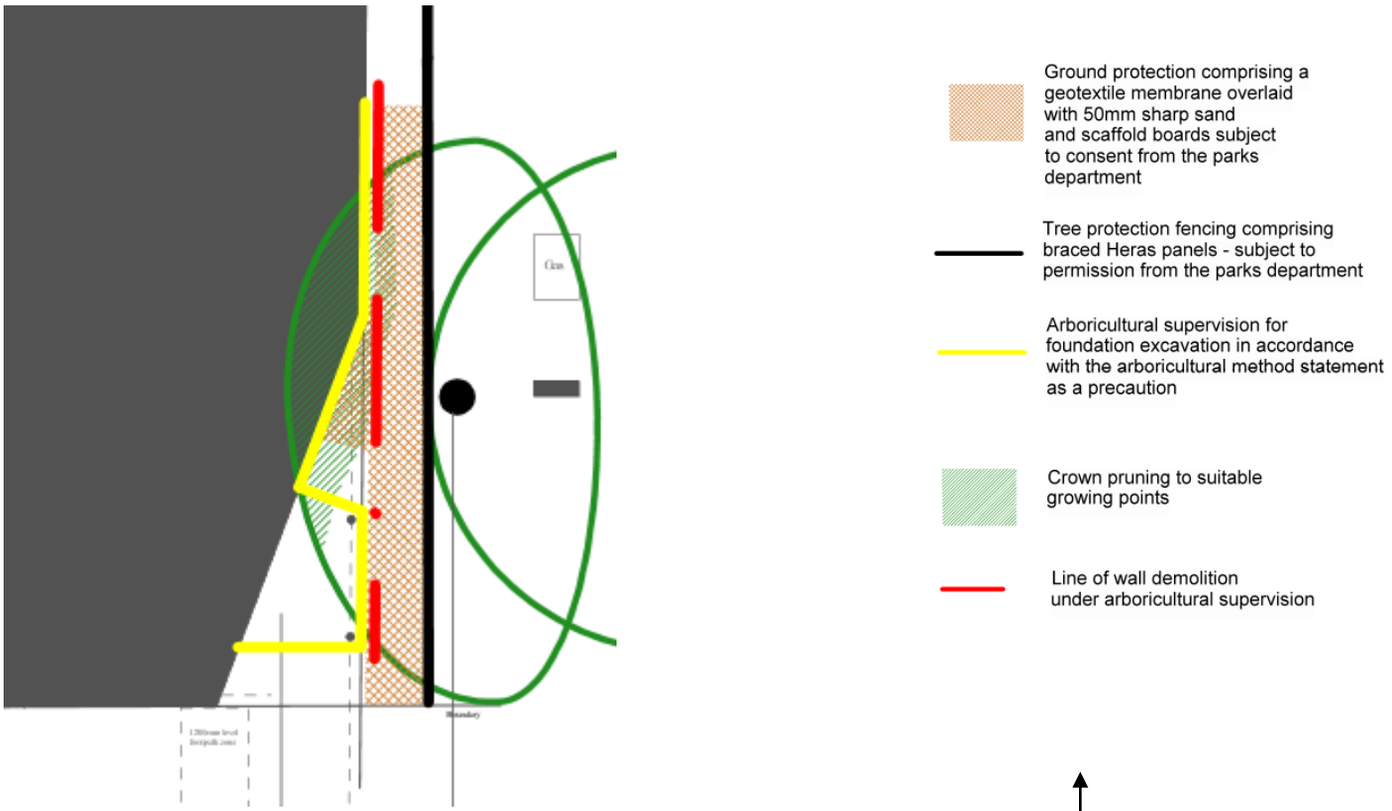
Photo 3 looking towards the tree from the site.

Note the entrance covers for the large inspection chambers (shown arrowed)

Arboricultural impact assessment:

The tree will be retained and protected as follows:

- The crown will need to be trimmed back slightly to facilitate the scaffold, and be maintained at this new profile. When the tree is in leaf, any windows on this side will be in shade. However the part of the building nearest the tree is a stairwell, and not habitable living space. The internal lighting design will need to take the shading effect of the tree in summer into account. The tree has a good vitality and has responded well to previous pruning. Works will be carried out under the control of Camden Council. Note, the building nearest the road is single storey.
- The wall will be demolished with care in accordance with the method statement at appendix 6.
- The tree will be protected with ground protection and fencing in accordance with the specification at appendix five and at the location on the tree protection plan at appendix three (extract below):



Plan 2 extract from SHA 153 TPP. Do not scale. North

- As a precaution, the foundations along the yellow line will be dug under arboricultural supervision. It is unlikely that there will be any roots, but given the importance of this line of trees, extra vigilance is essential.

T2 – T5 whitebeams

These trees are in good health and there is no impact to, or from, the proposal.

T6 and T7 apple

These young trees are in good health and there is no impact to, or from, the proposal.

7. Conclusions:

7.1 The building has been designed to avoid habitable rooms near the trees. The building is partly on the line of the wall, which is acting as a root barrier at least to the depth of its foundations. Any roots growing below the wall will be stopped by the inspection chambers 1m from the boundary. As a precaution, works near the tree will be carried out under arboricultural supervision.

7.2 The crown will need to be cut back slightly to facilitate the scaffold. The contractor will need to produce a method statement that safely minimises the width of scaffold to satisfy all parties, especially Camden Council tree officers. The crown will need to be pruned periodically to maintain this new profile.

7.3 The trees are important to the setting of Camden Road. They are in late maturity and have a life span of over 20 years. However it would be prudent to plant replacements in the park, subject to the opinion of the park friends group and Camden Council, to ensure continuity of tree cover.

8. Recommendations:

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

8.2. That the arboricultural method statements are developed further and are observed by all site personnel and supervised at key stages by the project arboricultural consultant. Short supervision reports are to be written after each inspection as a record of compliance and audit trail to the Local Authority.

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

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

8.5. That the line of the underground services must be outside of Root Protection Areas. However, as a precaution the final service plan should be assessed by an arboriculturalist. If it is unavoidable that services are to be located in RPAs, then a method statement must be produced.

8.6. That the landscaping scheme includes a mix of native trees from a cross section of species to ensure biosecurity against host specific pests and diseases.

8.7. That no tree works take place until consent is granted and under the control of Camden Council tree officers

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

8.9. That the removal of the wall and the installation of the foundations (as shown by the yellow line) is carried out under arboricultural supervision.

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

Director
Sharon Hosegood Associates Ltd

Appendix 1

Tree survey sheets

145-147 Camden Rd, London

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	Whitebeam *Sorbus aria*	11.0	53	1	4.5	2.0	5.5	3.5	4.0	Late Mature	Structural condition Good. Physiological condition null. Access to inspect base - Restricted / obscured. Competition - Adjacent trees. Deadwood - Minor. No significant faults observed. Pruning wounds - Historic. Rubbing limbs. Suppressed crown - Minor. This single stemmed tree is one of four whitebeams growing in Cantalowes Gardens. Collectively they provide screening and softening between the park and road. The crown of the tree overhangs the site boundary. There is a 2m wall between the park and the site	Responsibility of Parks	127.1	**6.4**	**20-40**	B1/B2
Tree T2	1	Whitebeam *Sorbus aria*	13.5	53	1	4.5	4.5	4.5	4.5	4.0	Late Mature	Structural condition Good. Physiological condition null. Access to inspect base - Restricted / obscured. Competition - Adjacent trees. Deadwood - Minor. No significant faults observed. Pruning wounds - Historic. Rubbing limbs. Suppressed crown - Minor. This single stemmed tree is one of four whitebeams growing in Cantalowes Gardens. Collectively they provide screening and softening between the park and the road.	Responsibility of Parks	127.1	**6.4**	**20-40**	B1/B2
Tree T3	1	Whitebeam *Sorbus aria*	13.5	53	1	4.5	4.5	4.5	4.5	4.0	Late Mature	Structural condition Good. Physiological condition null. Access to inspect base - Restricted / obscured. Competition - Adjacent trees. Deadwood - Minor. No significant faults observed. Pruning wounds - Historic. Rubbing limbs. Suppressed crown - Minor. This single stemmed tree is one of four whitebeams growing in Cantalowes Gardens. Collectively they provide screening and softening between the park and the road.	Responsibility of Parks	127.1	**6.4**	**20-40**	B1/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.

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 T4 & T5	1	Whitebeam *Sorbus aria*	13.5	53	1	4.5	4.5	4.5	4.5	4.0	Late Mature	Structural condition Good. Physiological condition good. Access to inspect base - Restricted / obscured. Competition - Adjacent trees. Deadwood - Minor. No significant faults observed. Pruning wounds - Historic. Rubbing limbs. Suppressed crown - Minor. This single stemmed tree is one of four whitebeams growing in Cantalowes Gardens. Collectively they provide screening and softening between the park and the road	Responsibility of Parks	127.1	**6.4**	**20-40**	B1/B2
Tree T6	1	Apple sp. *Malus sp.*	2.0	10	1	2.0	2.0	2.0	2.0	1.0	Young	Structural condition Good. Physiological condition Good. No significant faults observed. Young planted tree / trees.	Responsibility of Parks	4.5	**1.2**	**20-40**	C2
Tree T7	1	Apple sp. *Malus sp.*	4.0	10	1	2.0	2.0	2.0	2.0	1.0	Young	Structural condition Good. Physiological condition Good. No significant faults observed. Young planted tree / trees.	Responsibility of Parks	4.5	**1.2**	**20-40**	C2

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

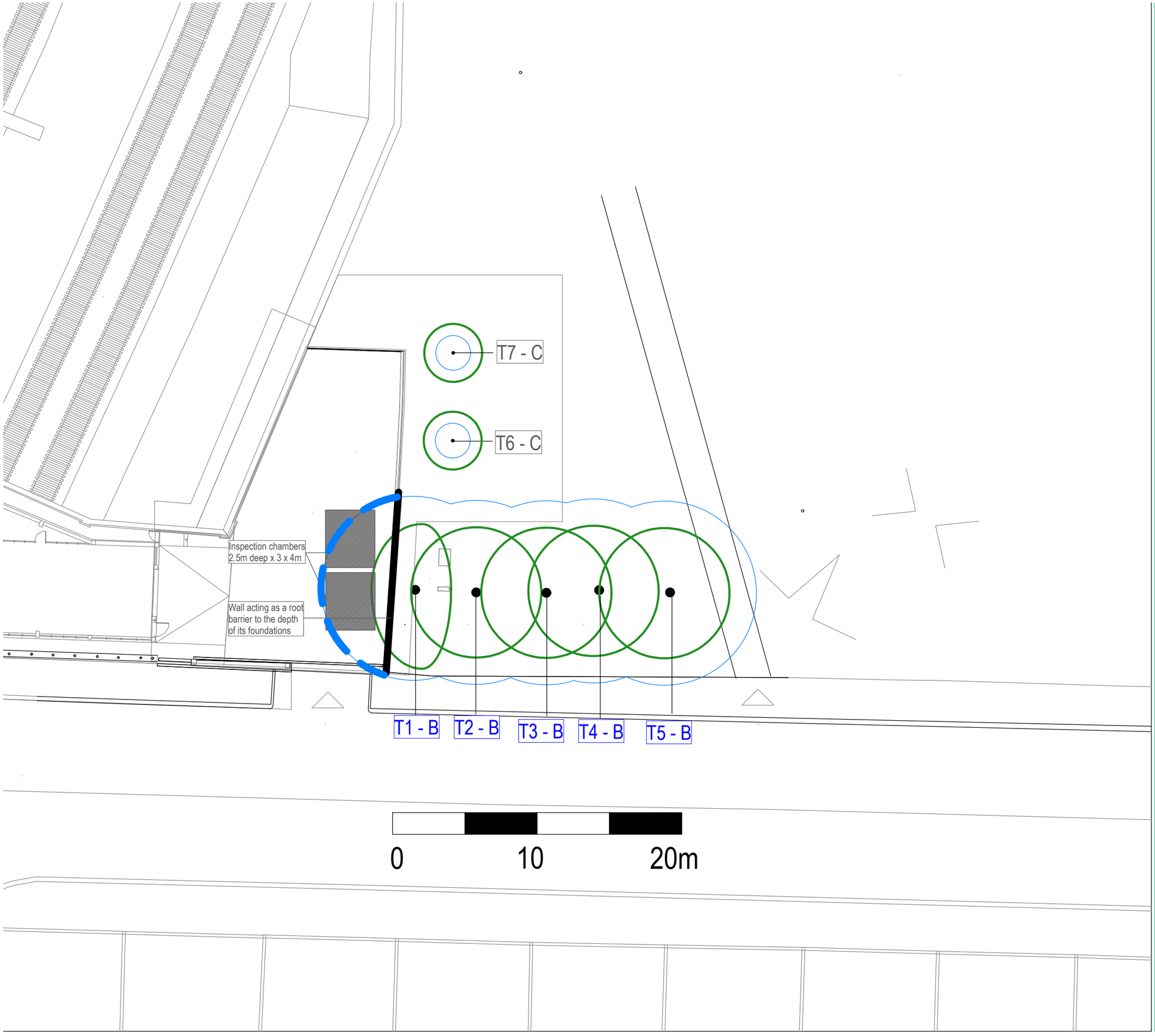
The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

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 153 TSP



T1 - B Category B - moderate quality and value

T1 - C Category C - low quality and value

Crown spread

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

Although this is in the root protection area, there are unlikely to be any roots due to the chambers, wall and concrete

Please note this is not based on a topographical drawing, and therefore tree locations need to be checked on site

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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Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMH
Date	**Drawing Number**	**Scale**	**Drawing Status**
04.03.16	SHA 153 TSP	1:250@A3	For Issue

Revision

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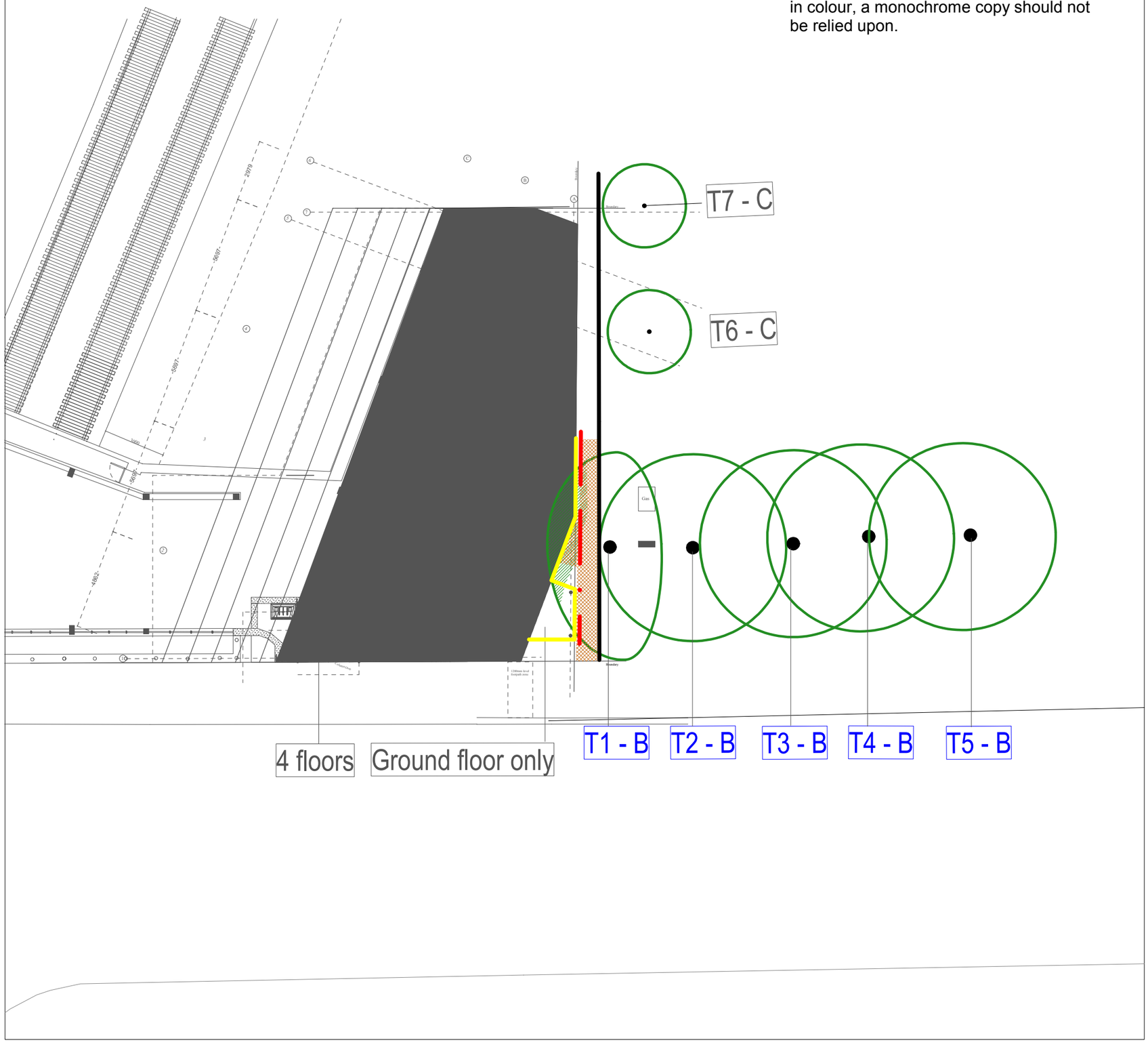
Appendix 3

Tree protection plan SHA 153 TPP

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.



T1 - B Category B - moderate quality and value

T1 - C Category C - low quality and value

Crown spread

Ground protection comprising a geotextile membrane overlaid with 50mm sharp sand and scaffold boards subject to consent from the parks department

Tree protection fencing comprising braced Heras panels - subject to permission from the parks department

Arboricultural supervision for foundation excavation in accordance with the arboricultural method statement as a precaution

Crown pruning to suitable growing points

Line of wall demolition under arboricultural supervision

Rev :	Description :	Authorized :

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Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMH
Date	**Drawing Number**	**Scale**	**Drawing Status**
15.03.16	SHA 153 TSP	1:200@A3	For Issue

Revision

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Appendix 4

Tree surgery schedule

Tree surgery schedule

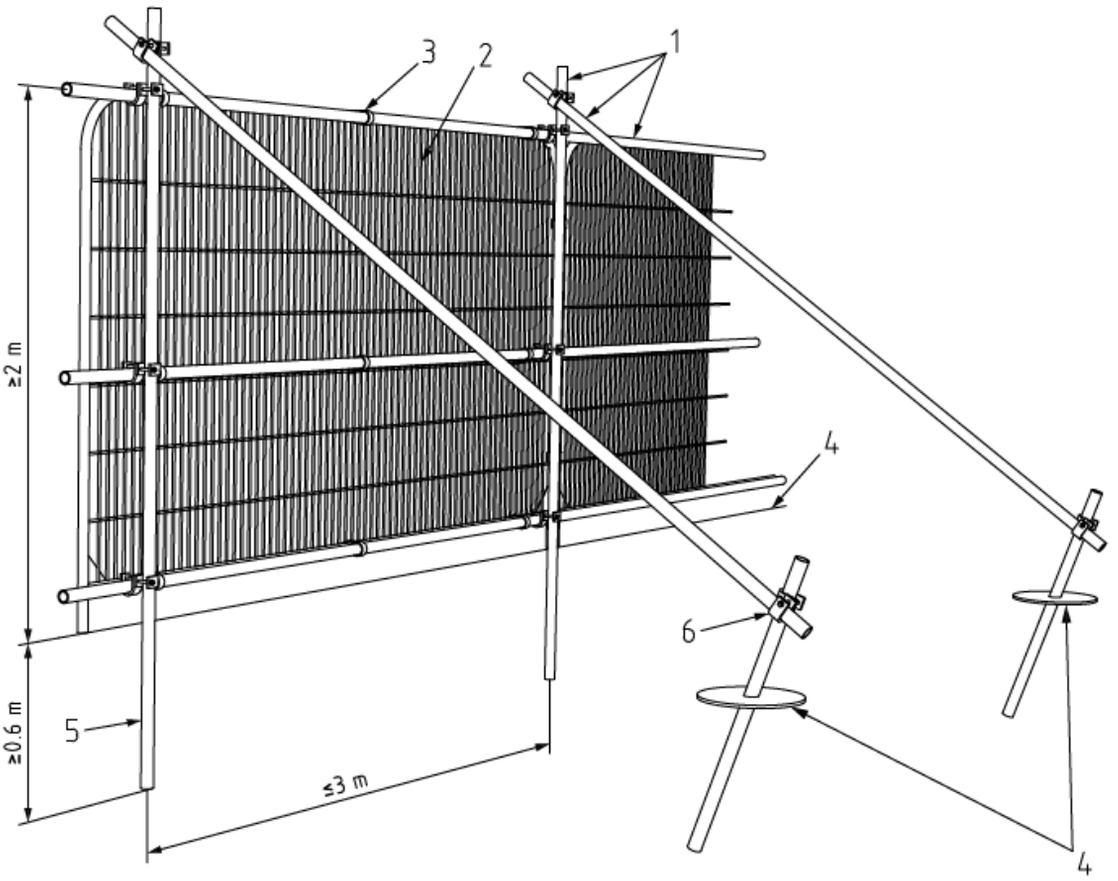
All works to be carried out in accordance with BS 3998:2010 'Tree works – Recommendations'. All pruning cuts to be made at suitable growing points in the line with the principles of 'Natural target pruning'. This work is to be carried out under the control of Camden Tree Officers.

Tree no.	Species	Proposed works	Reason
T1	Whitebeam	Tip prune back by approximately 1 – 1.5m to achieve clearance	To achieve clearance

Appendix 5

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.

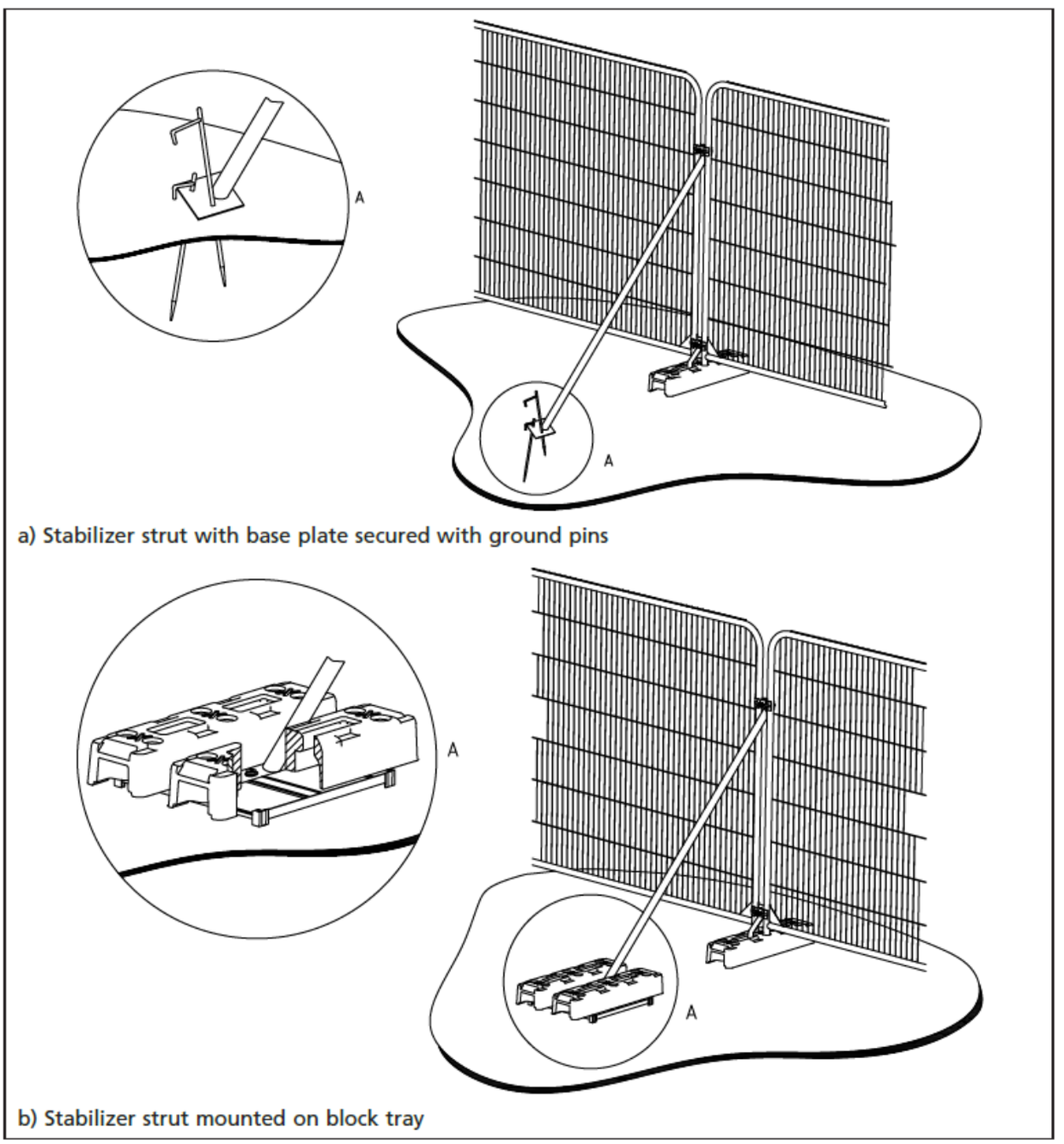
Barriers should be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees(s). Barriers should be maintained to ensure that they remain rigid and complete.

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.

BRITISH STANDARD **BS 5837:2012**

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


PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.


TREE PROTECTION AREA
KEEP OUT !
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE PROJECT ARBORICULTURIST

Ground protection during demolition and construction

Where working space temporary access is needed within the root protection area during works, fencing should be set back the minimum amount to achieve the required room. If there is existing hard surfacing in this area, it should remain during the works as ground protection. The suitability of this surfacing for ground protection, and whether it needs to be reinforced to bear the weight of machinery, should be assessed by an engineer and discussed with an arboriculturist.

Where the set back of the fencing exposes unmade ground, the ground must be protected before any works take place on site. This is to prevent root damage and soil compaction.

The ground protection might comprise of one of the following: (section 6.2.3.3 of BS)

A) For pedestrian movements only, a single thickness of scaffold boards 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. 100mm depth of woodchip), laid onto a geotextile membrane;
B) For pedestrian-operated plant up to a gross weight of 2 tonnes, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;
C) For wheeled or tracked construction traffic exceeding 2 tonnes gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

The location for ground protection is shown on the tree protection plan by coloured hatching, identified in the key.

Appendix 6

Draft arboricultural method statement

Tree works:

Recommendations for tree works can be found in the tree surgery schedule in Appendix 5. 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. Works to be controlled by Camden Tree Officers.

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.

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.

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.

Protection of tree canopies: Piling rigs and cranes are often used close to trees. Work must be carefully planned so that there is sufficient room to avoid hitting the canopy during transportation or operation. Arboricultural supervision may be required, however it is the responsibility of the contractor to assess and plan the work. Any access facilitation pruning required is detailed in the tree surgery schedule.

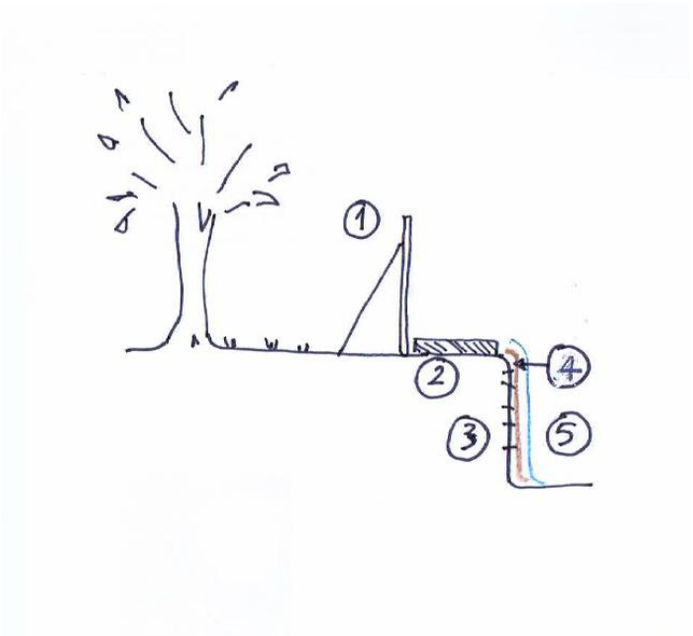
New landscaping: Within the root protection areas of trees to be retained, the preparation of soil for planting and turfing will be carried out by hand. Cultivation will be kept to a minimum and new topsoil must not exceed 100mm in depth within 1m of the stem. Top soil and other materials will be transported by wheelbarrow on running boards when working near trees.

Removal of the boundary wall (as shown by the red line on the tree protection plan SHA 153 TPP):

- The tree protection (fencing and ground protection will be installed)
- The wall will be pulled back in the normal way in accordance with the contractors method statement towards the site
- The foundations will be removed under arboricultural supervision and guidance. Any roots found growing along the foundation will be carefully teased away and wrapped in damp hessian. The trench will be backfilled with good quality top soil immediately.

The work will not take place in hot sunny or frosty weather as this will damage tree roots.

Construction of the foundation: Within the yellow line area on the tree protection plan, the wall's footings will be hand dug in the presence of an Arboriculturist. Any roots found will be cut cleanly with bypass secateurs or a small hand saw. A photographic record will be kept of the pruned roots. The vertical wall of the trench (on the tree side) will be faced with a double layer of damp hessian pegged in place to prevent it from sagging. The purpose of this is to prevent desiccation of the roots. Work should not take place in very hot, dry, or frozen conditions to avoid root damage. The hessian will then be faced with an impermeable plastic sheet to prevent the alkalinity of the concrete scorching the cut ends of the roots. A simple diagram is found overleaf:



1. Tree protection fencing
2. Ground protection
3. Root pruning
4. Double layer of hessian (pegged)
5. Impermeable plastic sheeting (pegged)

Arboricultural site supervision

An initial site meeting:

Before works have started, but after the tree surgery and tree protection measures are in place. At this meeting the site manager, contractor, arboricultural consultant should discuss methodology and the tree protection measures will be examined. A '*What you need to know about working near trees at 139 - 147 Camden Road, London NW1 9HA*' sheet will be issued which includes contact details.

- Inspection of fencing
- Removal of wall
- Installation of foundations

After each site supervision, a short report will be sent to the contractor, client and local authority as a record of compliance.

Appendix 7

Tree related legislation

Tree preservation orders

The Town and Country Planning (Tree Preservation) (England) Regulations 2012. There are no tree preservation orders.

Conservation Area

The site is not in a Conservation Area

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

Statement of methodology and reference material

Statement of methodology

Review of architects plans

Site visit made by Sharon Hosegood on 26.02.16 in dull weather.

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, the plans at appendix two and photographs within the text.

Received material

0 Ground Floor

139-147 Camden Road advice

PMA168_SITE PLAN

Reviewed documents and text

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

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

R.G.Strouts and T.G.Winter 'Diagnosis of ill-health in trees' TSO 1994

London Borough of Camden website

C. Mattheck 'The body language of trees' 2015

Appendix 9

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 London Borough of Camden before any works to trees take 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. The tree information is from the time of the survey. Some pests, diseases and fungi only appear seasonally, therefore it is possible not all issues that may affect the health of the trees could be observed.

Appendix 10

My experience and qualifications

Sharon Hosegood
ASSOCIATES

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 in July 2015 and September 2015, in 'Britain Beneath Your Feet' demonstrating tree radar at the Burghley Country Park, Lincs, with Dallas Campbell, and latterly in the consumer programme 'Rip Off Britain', again with tree radar equipment.

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 Arboricultural 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

Appendix 11

Glossary

Access facilitation pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary for operations on site.
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.
Architecture	In a tree, a term describing the pattern of branching of the crown or root system.
Backfill medium	Material used for refilling an excavated planting hole.
Body language	In trees, the outward display of growth responses and/or deformation in response to mechanical stresses.
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.
Buttress zone (root flare)	The basal part of a tree, where the major lateral roots join the stem with buttress-like formations on the upper sides of the junctions.
Construction exclusion zone	An area based on the root protection area from which access is prohibited for the duration of the project.
Crown	In arboriculture, the main foliage-bearing portion of a tree.
Crown lifting	The removal of shortening of the branches that form the lower part of the crown of a tree.
Crown reduction	Pruning in order to reduce the size of the crown 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.
Dessication	The state of extreme dryness, the drying out of roots.
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'*.
Rootplate	The central part of the root system of a tree, consisting of the large-diameter main roots and a dense mass of smaller roots and soil.
Target pruning	The pruning of a twig or branch so that tissues recognisably belonging to the parent stem or branch are retained and not damaged.
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.
Vigour	In tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth.
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.

Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

SITE

145 - 147 Camden Road,

London

NW1 9HA

CLIENT

Paul McAneary Architects on behalf of Harry Motors Ltd

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

DATE: 07.03.16
OUR REF: SHA 153

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