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Arboricultural Survey (BS5837:2012) & Impact Assessment Report

Site details:

25 Dartmouth Park Hill
London
NW5 1HP

Client details:

Architecture for London
18 Acton Street
London
WC1X 9NG

Date of Report:

16th April 2015

Report Prepared by:

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Contents

1. Introduction

1.1 This report has been commissioned by *Architecture for London* to survey, assess and provide arboricultural recommendations and an impact assessment for the trees within and in close proximity to the proposed development at 25 Dartmouth Park Hill, London, NW5 1HP.

1.2 A site visit was conducted on Tuesday 14th April 2015 to survey and assess the trees. The weather at the time of inspection was dry and sunny with cold temperatures.

1.3 A tree survey, report and recommendations have been compiled for 9 trees (T1-T9) surveyed within 25 Dartmouth Park Hill, London, NW5 1HP.

1.4 The details of the subject trees are set out in the tree survey table in *Appendix A*. The trees were surveyed on the date and time shown above and the tree survey assessment information for the trees describing size, condition and surroundings are found within this appendix.

1.5 The trees located within the site and included in the survey are shown in site plan, *Appendix B.1 - B.2*, and these correspond to the tree survey results table, *Appendix A*.

1.6 Photographs of the trees can also be found in *Appendix C*.

1.7 This report and the opinions within it have been produced by Marcus Foster, a qualified Arboriculturist holding a National Diploma in Arboriculture, and the Arboricultural Association's Technicians Certificate as well as a degree in History and Society. Work experience within the industry includes work as a Contracts Manager for an Arboricultural Association Approved Company, a Local Authority Tree Preservation Officer and an independent Arboricultural Consultant.

1.8 No additional documentation has been referred to relating to the tree or the building at this property for the compilation of this report.

2. Survey Details and Scope

2.1 The site survey included the 9 trees (trees T1-T9) as shown in the survey, *Appendix A,* and also highlighted on the site plans*, Appendix B.1* and *B.2.*

2.2 The trees were surveyed from ground level from within 25 Dartmouth Park Hill, London, NW5 1HP. The diameter of the trunks have been measured using a Diameter at Breast Height tape. The height of the trees have been estimated due to the topography of the site.

2.3 The following information was recorded for each tree and is shown in the Tree Schedule included in *Appendix A*:

- Number: an identity number which cross-references locations shown on the plan in Appendix A with the schedule in Appendix B.
- Species: listed by common names
- Tree Height: height in metres (m)
- Tree Spread: spread in metres (m)
- Stem diameter: measured in millimetres (mm) and taken at 1.5m above ground level
- Age Class: Y (young); EM (early-mature); M (mature); OM (over-mature)
- Vigour: G (good); F (fair); P (poor); D (dead)
- Physiological Condition: G (good); F (fair); P (poor); D (dead)
- Structural conditions: Specific comments relating to each tree
- Preliminary Management Recommendations
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance (if applicable – BS5827: 2012)

2.4 The information contained within the report reflects the condition of the specimens examined at the time of the inspection. As the inspection was only visual no guarantee can be given concerning the condition of the wood at present in any of the trees inspected and furthermore that no future problems or deficiencies may arise.

2.5 Information recorded in the tree survey, *Appendix A* is expanded in the report findings and recommendations have been made in *Section 5*.

Tree Survey Summary

2.6 All trees have been survey in accordance with BS5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012) and have been rated as follows:

Category 'A' trees

Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees have been categorised as 'A' trees for one of the following reasons:

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'A' category trees have a green outline as denoted within the site plan key.

Category 'B' trees

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees have been categorised as 'B' trees for one of the following reasons

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'B' category trees have a blue outline as denoted within the site plan key.

Category 'C' trees

Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Trees have been categorised as 'C' trees for one of the following reasons

- Arboricultural qualities - unremarkable trees of very limited merit
- Mainly landscape qualities
- Trees with no material conservation or cultural value

Within the Site Plan (Appendix B) those trees rated as 'C' category trees have a grey outline as denoted within the site plan key.

Category 'U' trees

Trees 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.

Within the Site Plan (Appendix B) those trees rated as 'U' category trees have a red outline as denoted within the site plan key.

3. Survey Limitations

3.1 No soil excavations have been carried out.

3.2 This report only considers the trees and conditions at the time of inspection.

3.3 No invasive tools were used during this site survey.

3.4 It should be noted that not all shrubs within this property have been included in the survey and report.

3.5 This report is preliminary and further investigations may be required in order to reach firm conclusions and/or further recommendations for action.

4. Findings and Discussion

Site Overview

4.1 There are 9 trees located within close proximity of the proposed construction works which incorporate development works to the rear of the existing property. Trees T1 - T9 have been surveyed and numbered as is depicted within the site plan (*Appendix B.1 & B.2* - also within the Tree Protection Plan *Appendix B.3*).

4.2 The trees surveyed are located within the London Borough of Camden; they are also located within the Dartmouth Park Conservation Area and are therefore protected by this status.

4.3 The proposed development has the potential to affect the trees in the following ways:

- **Potential excavations required for rear extension / development works in close proximity to the trees have the potential to cause damage**

- **Associated construction site activities which have the potential to cause long term damage to the trees and surrounding vegetation**

- **Compaction of the ground surrounding the trees during construction works**

- **The use of and storage of materials and chemicals on site during the construction process**

4.4 The trees have been surveyed taking into account the condition, general health and form. In addition they have been surveyed taking into account the amenity value that is offered in relation to both the landscape and surrounding buildings. This report outlines the impact that the proposed development will have on the treescape and landscape; it provides recommendations to ensure that long-term amenity value for the area is both retained and enhanced.

4.5 The report has been written with close reference to the British Standard Guidance, British Standard 5837: 2012 ‘Recommendations for trees in relation to construction’ (BS5837: 2012), which addresses the juxtaposition between trees and structures.

Development proposal in relation to trees within close proximity

4.6 The proposed development works are to incorporate the retention of all trees and groups of vegetation that have been surveyed and rated category 'C.1' and above. This report will outline the condition of the trees and necessary requirements during the construction process in order to ensure their long term health, and the retention of the amenity value they provide for the long term. The loss of one tree - T1, is required to facilitate the development; this tree has been rated au a 'U' category tree for its poor quality and low amenity value within the survey.

4.7 The proposed construction works are to incorporate a rear extension which will extend towards trees within the garden area. The development is achievable without causing damage to the trees being retained providing precautionary and protection measures are adhered to within this report, particularly as recommended tree protection distances (BS5837:2012) can be adhered to at all times.

4.8 Therefore by implementing the proposed protection measures, damage from the following activities will be avoided during the construction process:

4.8.1 Potential damage to the root plate of trees within close proximity of construction site activities where excavations may occur, potentially causing damage to the health and/or structural integrity of the trees.

4.8.2 Potential damage from compaction of the root plates of all trees where construction activities will require working methods with heavy machinery and storage of materials.

4.8.3 Potential direct damage to the canopy of trees within the site from construction site activities.

4.9 The aim of this report is to address these issues and highlight the solutions required in order for the implementation of the development to be carried out without detrimentally affecting the structural integrity of the trees.

Tree Survey Notes - Trees T1 - T9 in relation to construction method

Tree T1

4.10 Tree T1 is an over mature Laburnum (*Laburnum spp*) tree located within a raised border on the northern boundary which has poor form and is in significant decline. The tree is multi-stemmed at the base with congested form and rubbing stems. Significant deadwood in the mid and upper canopy along with a stunted crown shows the tree to be in decline. The tree is rated as a 'U' category tree (BS5837: 2012) due to these characteristics and is therefore proposed for removal.

4.11 The tree's location within very close proximity of the proposed extended hard landscaping area and rear extension means that a replacement tree is proposed to be re-planted to the rear of the property, close to the south western boundary (as depicted within *Appendix B.2*). The specifications of the replacement planting which will improve the treescape at the rear of this property for the long term is outlined in *Section 5.3.*

Tree T2

4.12 Tree T2 is a young snowy mespil tree (*Amelanchier canadensis*) which has reasonable form and is generally structurally sound. Currently a very small tree, T2 was likely planted within the past 2 years and offers limited amenity value at present. The tree is rated as a 'C.1' category tree (BS5837: 2012) and is proposed for retention, albeit in a revised location, at a greater and more appropriate distance from the property in order to facilitate the proposed development.

4.13 In order for this tree to be successfully transplanted within the proposed scheme, it is important that the guidelines as specified within *Section 5.4* are closely adhered to in order to ensure continued ornamental and amenity value is provided for the long term.

Trees T3 - T6

4.14 Trees T3-T5 comprise a small group of Himalayan Birch trees (*Betula utilis 'Jacquemontii')* which are all structurally sound and offer excellent form with good vigour. The trees are currently young to early mature specimens which have been planted within the past 5 years. The trees collectively , alongside T6 provide amenity value for this rear garden area and this will be enhanced in the long term as the trees mature.

4.15 These trees although offering good amenity value are also categorised as 'C.1' (BS5837:2012) taking into account their relative young age and rear garden location. The tree closest to the proposed extension, T3, has a recommended protection distance of 1.2m which will be fully achieved with the fencing constructed as recommended within *Appendix B.*3 (to specifications accounting for tree T6 in this area - see below) allowing for this tree and T4 - T5 to remain fully protected from the development.

4.16 Tree T6 is a mature Birch tree (*Betula pendula*) which has good form, is structurally sound and has a balanced canopy shape despite a slight lean to the north east. The tree is rated as 'C.1' (BS5837:2012) taking into account the rear garden location and relatively limited life span. This tree is at its closest point 9.5 metres from the proposed development and taking into account its recommended root protection distance of 2.9m, its comprehensive protection is fully achievable. The protection fencing that is specified (*Appendix B.3*) will allow for a 3 metre distance of protection from the main stem affording protection for this tree and all those remaining within the garden.

Trees T7-T9

4.17 Trees T7 and T8 are mature Plum trees (*Prunus spp*) which provide a combination of ornamental and amenity value at the rear of the property close to the western boundary. The trees will remain fully protected from all construction site activities by virtue of their location over 12 metres from the closest point of proposed works and a significantly greater distance than the recommended root protection distance of 2.0m from tree T7.

4.18 Tree T9 is a mature Pear tree (*Pyrus domestica*) which is located on the northern boundary and provides good ornamental value to this area of the rear garden. The tree is generally structurally sound although has fair vigour only with some deadwood throughout. The tree is rated as 'C. 1' (BS5837:2012) taking into account the rear garden location and mainly ornamental value provided. This tree is at its closest point is sited 6.9 metres from the proposed development and taking into account its recommended root protection distance of 3.0m, its comprehensive protection is fully achievable; the protection fencing is specified at least 3.0m from the east of the main stem.

4.19 The protection fencing that is specified for trees T3-T6 to the south is therefore recommended to extend across the width of the garden (see *Appendix B.3*) ensuring that full protection is provided for the entire western section of the rear garden, therefore also incorporating trees T7-T9.

Mixed shrubs / remaining vegetation within rear of garden

4.20 It is important to note that the soft landscaping including mixed shrubs on the western and northern boundary that offer an informal and ornamental low screen will also remain protected from the construction process by virtue of the protection fencing that is proposed to be implemented to provide full protection of trees T2 - T9. This will ensure that the character and landscape of the garden as a whole is retained throughout the process.

Tree Protection Specifications

4.21 With the nature of development works and associated construction site activities potentially encroaching within the garden at the rear of the property it is important that the tree protection guidelines are adhered to in order to afford the full protection for the tree's surveyed. The implementation of the proposed development can be achieved whilst retaining all trees (with the exception of T1) within the area for the long term by taking into account all the above points within *Section 4* and in addition to the following which must be adhered to AT ALL TIMES:

- **The tree protection fencing / root protection area to be constructed as outlined with *Appendix B.3* of this report and to the specifications provided within *Appendix E***

- **All construction activities must adhere to the tree protection guidelines as explained throughout the report and as outlined below – these should remain for the entire construction process in order to provide comprehensive protection from the trees.**

- **No building materials or chemicals are stored within the Root Protection Areas - the boundaries of which will be clearly marked with the TREE PROTECTION NOTICES.**

- **There should be no mixing of concrete or chemicals within the tree protection areas during the construction process.**

- **There should be no fires within the site**

4.22 The site notice as included in *Appendix D* summarising the above information should be visible at all times for employees working within the site.

Summary

4.23 With close adherence to the above points and to the following:

- **Full implementation of Tree Protection Specifications**
- **Full adherence to Tree Protection Area**
- **Comprehensive use of the Tree Protection Notice**

all trees surveyed and proposed for retention, will remain protected from the construction process and can continue to provide amenity value in this area for the long term.

5. Recommended Tree Management Plan

5.1 Any tree work should be carried out to *BS 3998; 2010 'Tree Work – Recommendations*' and to standards set within the Arboricultural Association's 'Standard Form of Contract and Specifications for Tree Work' by a qualified arboriculturist.

5.2 In addition, any permissions for tree work should be sought prior to the commencement of works from the Local Authority, London Borough of Camden.

5.3 Tree Works Specification

T1 Laburnum
Fell to ground level

T2 Amelanchier
Prune to give 2m clearance from property

T3 Birch
No action required at present
T4 Birch
No action required at present

T5 Birch
No action required at present

T6 Birch
No action required at present

T7 Plum
No action required at present

T8 Plum
No action required at present

T9 Pear
No action required at present

5.4 Recommended Replacement Tree Planting

Any tree planting work should be carried out to *BS 8545; 2012 'Trees: From Nursery to Independence in the Landscape*'

It is recommended that a deciduous tree is planted to the following specifications:

Species: *Betula utilis* 'Jacquemontii'

- Single stemmed standard specimens, at least 14-16cm girth in size
- Any tree planting should take place during the planting season (November – March) with suitable ground preparation
- Irrigation pipes and suitable staking implemented as part of the scheme.

5.5 Recommended Transplanting of Tree T2

It is recommended that this tree is transplanted with adherence to the following guidelines if its proposed location is to be outside of the root protection area of the remaining trees / within the construction site where damage would inevitably occur during the development process:

- The tree should be removed from the ground with a minimum rootball of 30cm surrounding the main stem on each side ensuring the retention of fibrous roots where possible
- The tree is potted up into an approx size 50 litre pot with *John Innes No.3 Compost* and watered regularly during the growing season
- The tree should be replanted in its newly proposed

6. Appendices

Appendix A

Tree survey (BS5837:2012)

25 Dartmouth Park Hill
London
NW5 1HP

Colour Key: BS5837: 2012 (see *Section 2.6*)

- Category A
- Category B
- Category C
- Category U

25 Dartmouth Park Hill, London, NW5 1HP
BS 5837:2012 Tree Schedule – April 2015

Tree No	Species	Ht (m)	DBH (mm)	Sprd (m)	Age	Visual Cond	Vigour	BS5837 Cat. Rating (2012)	Remaining (years)	Comments / Structural Condition	Managem. Recomms	RPA (m)
T1	Laburnum	6	m/s 120	N: 2 E: 1 S: 2 W:2	M	P	P	U	N/A	Poor specimen, multi-stem from base and with congested form / significant deadwood, excessively leaning	Fell to ground level and grind out stump	N/A
T2	Snowy Mespil	3	60	N: 1 E: 1 S: 1 W:1	Y	F	F	C.1	10-15 years	Young small ornamental tree planted within past 2 years. Structurally sound with average form	Fell to ground level and grind out stump	N/A
T3	Birch	7	100	N: 1 E: 2 S: 1 W:3	EM	G	G	C.1	20 years +	Young - early mature tree planted within the past 5 years with good form and structurally sound	No action required at present	1.2
T4	Birch	7	100	N: 1 E: 1 S: 2 W:1	EM	G	G	C.1	20 years +	Young - early mature tree planted within the past 5 years with good form and structurally sound	No action required at present	1.2
T5	Birch	7	90	N: 1 E: 1 S: 2 W:1	EM	G	G	C.1	20 years +	Young - early mature tree planted within the past 5 years with good form and structurally sound	No action required at present	1.0
T6	Birch	12	240	N: 2 E: 2 S: 3 W:2	M	G	G	C.1	15-20 years	Good specimen, structurally sound with slight lean to the NE but overall balanced form	No action required at present	2.9
T7	Plum	9	180	N: 2 E: 1 S: 2 W:1	M	G	F	C.1	10-15 years	Reasonable specimen, structurally sound and offering some amenity value at the rear of the garden	No action required at present	2.0
T8	Plum	9	240	N: 3 E: 2 S: 3 W:2	M	G	F	C.1	10-15 years	Reasonable specimen, structurally sound and offering some amenity value at the rear of the garden	No action required at present	2.9
T9	Pear	8	t/s 250	N: 3 E: 3 S: 4 W:3	M	G	F	C.1	10-15 years	Good ornamental specimen, twin stemmed with relatively balanced form - ivy clad surrounding main union to 2m	No action required at present	3.0

Appendix B.2

Existing & Proposed Site Plan including Tree Protection Plan:

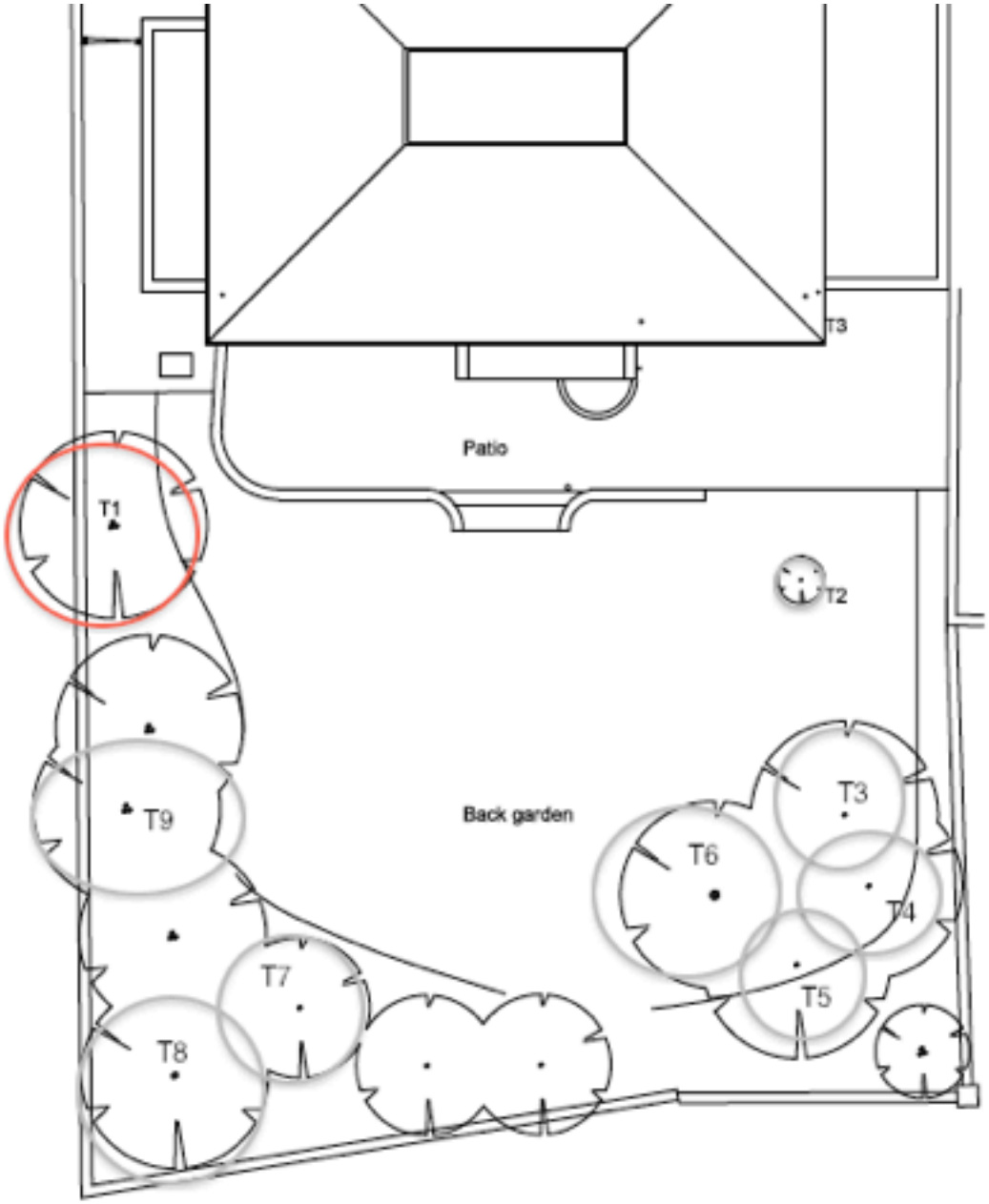
25 Dartmouth Park Hill
London
NW5 1HP

Plans supplied by:
Architecture for London
Drawing No:
GA 002
Date:
01-07-14

Tree Canopy Colour Key: BS5837: 2012 (see *Section 2.6*)

- **Category A**
- **Category B**
- **Category C**
- **Category U**

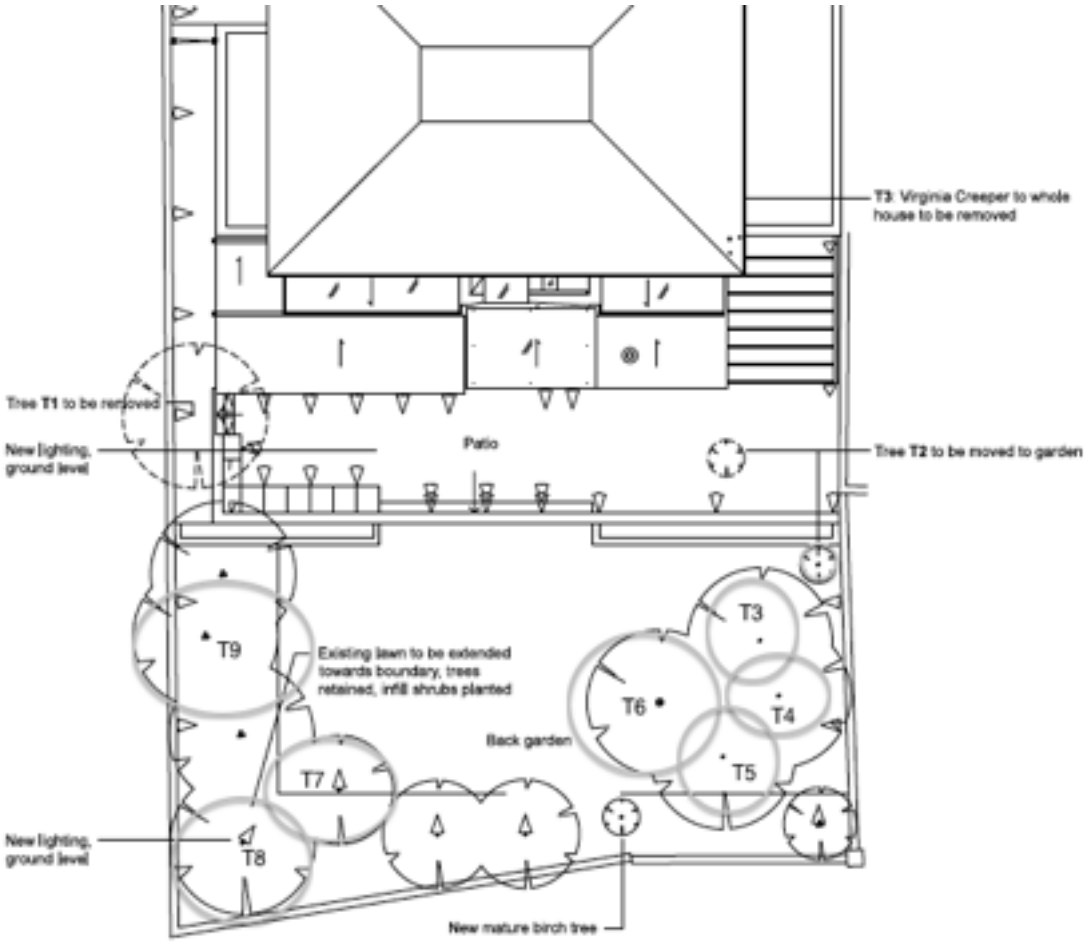
Appendix B.1 Existing Site Plan:
25 Dartmouth Park Hill, London, NW5 1HP



EXISTING

Do not scale from this drawing

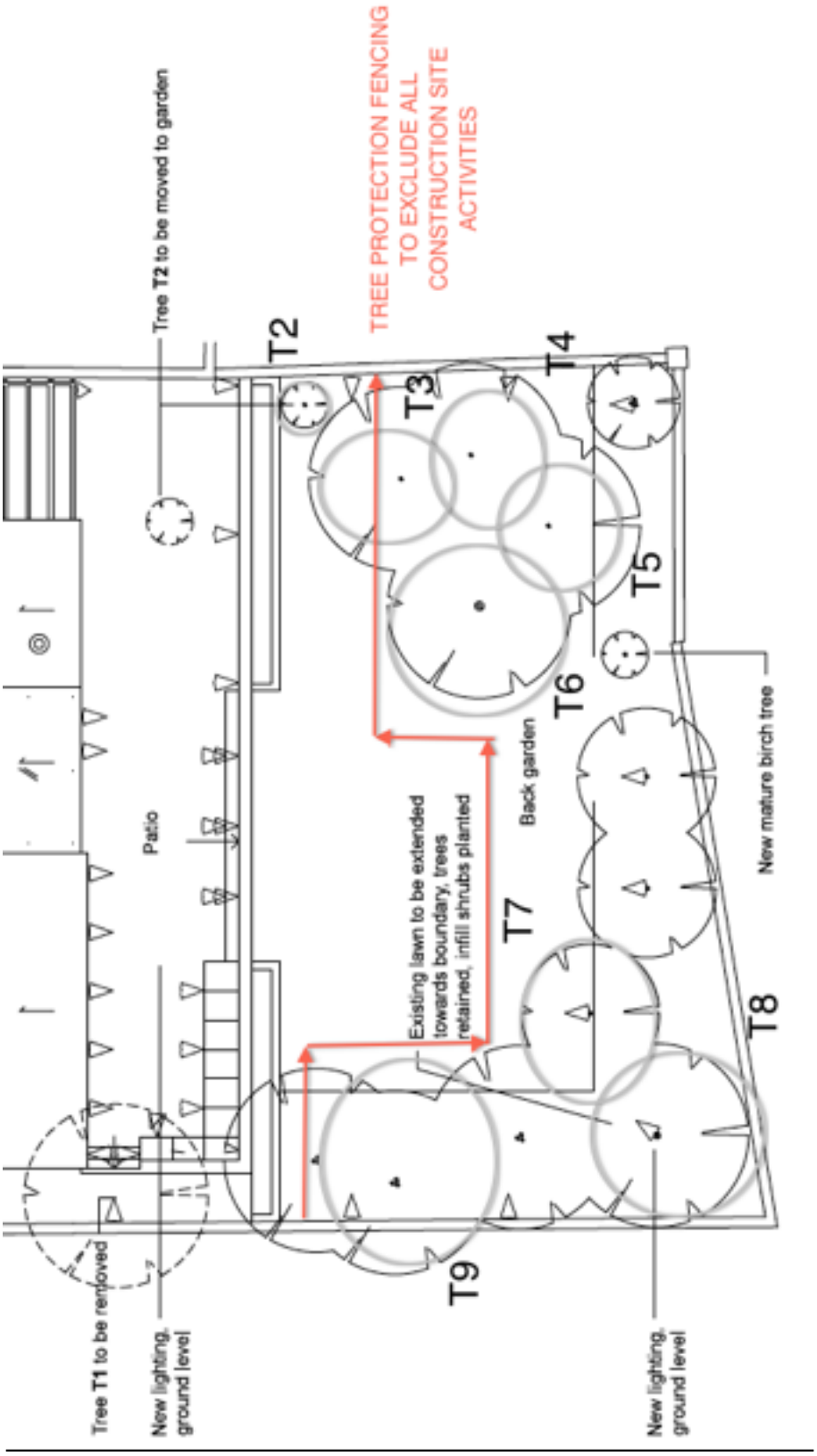
Appendix B.2 Proposed Site Plan:
25 Dartmouth Park Hill, London, NW5 1HP



PROPOSED

Do not scale from this drawing

Appendix B.3: Site Plan of Tree Protection:
25 Dartmouth Park Hill, London, NW5 1HP



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Tree Protection Site Plan Notes / Key:

1. Red line denotes Tree Protection Fencing to offer protection to soft landscaped areas and T1

Appendix C

Site Photographs for:

25 Dartmouth Park Hill
London
NW5 1HP

Taken 14th April 2015

C.1 Photograph of tree T1 proposed for removal and rear elevation of existing property, 25 Dartmouth Park Hill, London, NW5 1HP as viewed in a north easterly direction

C.2 Photograph of tree T2 proposed for removal and trees T3-T6 within rear of property, 25 Dartmouth Park Hill, London, NW5 1HP as viewed in a south westerly direction

C.2 Photograph of trees T7-T9 within rear of property, 25 Dartmouth Park Hill, London, NW5 1HP as viewed in a westerly direction

Appendix D:
Site Tree Protection Notice

Tree Protection Notice
(BS5837: 2012):

25 Dartmouth Park Hill
London
NW5 1HP

Notice to be clearly shown on site
AT ALL TIMES ON PROTECTIVE FENCING

Guidance for ALL EMPLOYEES working on site in relation to the tree protection required at all times

Site: 25 Dartmouth Park Hill

- There should be no storage of fuels, chemicals or cement based products within the root protection area of the proposed scheme where trees T2-T9 are located.

- There should be no storage of materials or mixing of chemicals / concrete within this area at any time. There should also be no fires within the site

- . Notice boards, telephone cables etc should not be attached to any part of any of the trees.

- The severance of any tree roots encountered larger than 2.5 cm in diameter MUST NOT occur without prior consultation with the Local Authority Tree Officer or appointed Arboricultural Consultant.

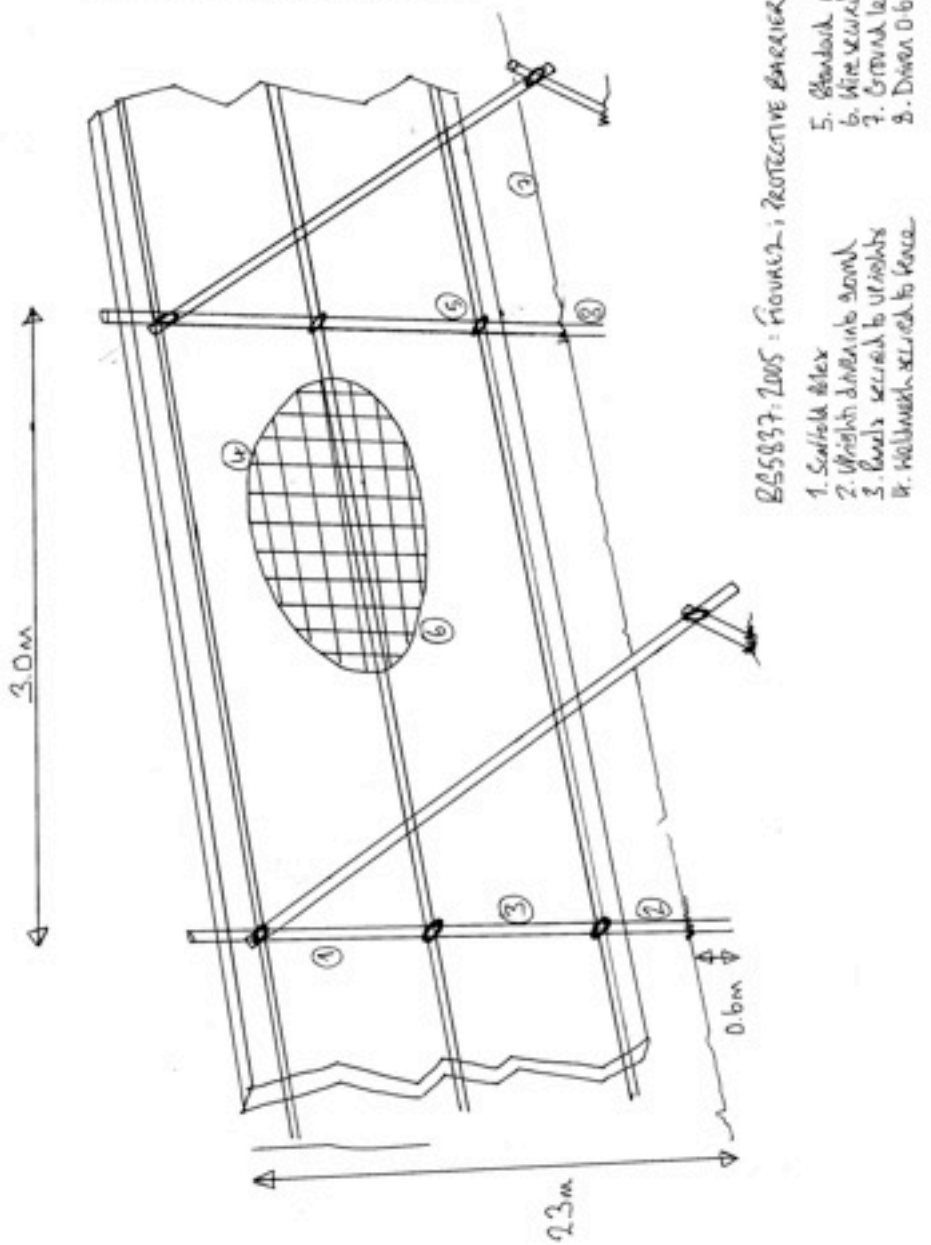
- If excavations do occur within the specified Root Protection Area where hand dug excavations are being undertaken, ANY tree roots encountered over 2.5cm in diameter should be retained where possible. Hand digging is to continue around any such tree roots.

If at any point it is deemed not possible to continue with excavations without having to damage significant tree roots, the Local Authority Tree Officer and / or Arboricultural Consultant must be contacted.

Marcus Foster (Arboricultural Consultant): 0781 202 4070
Local Authority Tree Officer (LB Camden): 020 7364 5009

Appendix E: Tree Protection Fencing as outlined in BS5837 (2012) Specifications

Appendix D: Diagram of Figure 2, Specification for protective fencing, as illustrated in BS5837: 2005



Appendix F: References

1. *BS5837: British Standard: Trees in relation to construction - Recommendations*, British Standard (2012)

2. *Principles of Tree Hazard Assessment and Management,* Lonsdale, D. (Department for Transport, Local Government and the Regions, 1999)

3. *The Body Language of Trees*, Mattheck, C. and Breloer, H. (HMSO, 1994)

4. *Trees in Britain,* Philips, R. (Pan Books, 1978).

5. *Diagnosis of Ill Health in Trees,* Strouts, R. and Winter, (TSO, 1994)

6. *NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2),* (November 2007)