

Trees and Construction

BS5837 Arboricultural Method Statement

Site: 57 Solent Road, London, NW6 1TY

Ref: 17266/A1_AMS

Client: Mahesh Varia



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- July 2017 -

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Revision	Description	Date
/	First report release	/

1. INTRODUCTION

1.1 **Instruction:** This advice has been prepared for Mahesh Varia (hereafter; client). It is in respect of the tree related planning considerations of a granted planning application for a scheme at 57 Solent Road, London, NW6 1TY (hereafter; site).

This report is to address the tree related planning condition of the granted application and is therefore produced in accordance with British Standard 5837 : 2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter; BS5837).

1.2 **Scope of this report:** This report has been produced in accordance with BS5837 and is intended to demonstrate how trees have been properly considered in relation to the approved application and associated plans. The objective is to provide tree protection details relating to the scheme's potential impact on trees and vice versa.

1.3 Following instruction the site was surveyed on the 13th July 2017. A site assessment and a BS5837 tree survey were carried out which informs this detailed arboricultural method statement / tree protection advice.

1.4 The details herein are subject to caveat at Appendix I, outlines relevant terms and definitions at Appendix II and constitutes the findings of the preliminary site survey, the assessment of the accepted scheme and the tree related planning conditions.

1.5 The tree survey and site observations were used to illustrate the site's arboricultural constraints in plan format as a 'Tree Constraints Plan' (hereafter; TCP). This is used as a base layer with the approved scheme outline as an overlay to inform this advice as a Tree Protection Plan (hereafter; TPP); the survey table and TPP are at Appendix III.

2. SITE & APPLICATION INFORMATION

2.1 The site is an in use mid terraced residential property. The rear garden is accessed via the property where the 2x surveyed trees are then observable (T1 and T2 - see; TCP), within the rear neighbour's garden.

2.2 **Scheme:** A development scheme has been granted planning permission for a ground floor rear extension to the existing property and a new basement.

The planning permission is subject to conditions, for which one states that *'prior to the commencement of any works on site, details demonstrating how trees to be retained shall be protected during construction work shall be submitted to and approved by the Council in writing. These details shall follow guidelines and standards set out in BS5837:2013 "Trees in Relation to Construction". 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 protection details'*.

It is also understood that the current intents relate to new rear garden landscape works and planting; confirmation of the landscape details are to be provided by the client for which this advice will act as an informative on trees and tree protection.

2.3 The site requires consideration from an arboricultural perspective due to the presence of offsite rear neighbour's trees; these trees are deemed to be within impacting distance of the site and potential construction access / works area.

3. ARBORICULTURAL ASSESSMENT & METHOD STATEMENT

3.1 The following information, as with the prior contents of this report, is to be read in conjunction with the tree survey data table and the appended Tree Protection Plan (17266/TPP/01); it is referred to as the Method Statement (hereafter; AMS).

Additionally, the recommendations of this AMS require approval by the local authority in accordance with the tree related planing conditions as illustrated on the TPP.

3.2 Arboricultural Site Monitoring / Supervision

3.2.1 The local authority will need confirmation of adherence to this AMS for tree protection, by '*a scheme of arboricultural supervision*'. This will require site inspections by a qualified arboriculturist during site works (i.e. Andrew Turnbull from Indigo Surveys Ltd).

3.2.2 In this instance, the trees are offsite and clear of the approved ground floor and basement construction, and so phased works will be used with Protective Barrier Fencing (hereafter; PBF) to exclude the on site crown and RPA portions. Thus, the risk to trees is limited, and a high frequency of inspections is not considered necessary.

3.2.3 A record of each site visit will be kept and a summary letter drafted for the client, the site manager and the local authority (to be sent to the client by email for distribution). For which, scheduled arboricultural supervision/monitoring is recommended thus:

- (1.a) Onsite observation/guidance at the time of PBF installation;
- (1.b) Induction of site management regarding tree protection and the assignment of key personnel (site manager) responsible for maintaining the AMS;
- (2) Half way through basement excavation to confirm maintained tree protection;
- (3) Half way through construction to confirm maintained tree protection and advice on sensitive methods for rear garden landscape works and RPAs;
- (4) After hard landscape completion to allow PBF to be removed, soft landscape can then be completed and to sign off the site as having adhered to the AMS.

3.3 Tree Works

3.3.1 No tree works are proposed or required in order to facilitate the approved scheme.

3.3.2 Proposed tree works must be undertaken with the council's written permission (subject to statutory exemption) and undertaken to BS3998 by a tree service contractor who is suitably qualified, experienced and insured to for arboricultural contracting.

3.4 Underground utilities

3.4.1 The trees are to the rear neighbour's garden, and clear of the approved ground floor extension and new basement. Hence, new drainage and underground utilities will be clear of the trees's RPAs and the fenced off CEZ (see; TPP), and no arboricultural restrictions are to be applied to the excavations or installations.

3.4.2 It is anticipated that all utility runs will be located to the side and/or front of the property. These are to be shown on a dedicated utilities layout plan and be clear from RPAs; if this is not the case special measures for underground utilities will be required.

3.5 Protective Barrier Fencing (PBF) Specification

3.5.1 Protective barrier fencing (hereafter; PBF) is to be installed to prohibit access, exclude ground works, material storage and construction processes etc. from the exposed RPAs of the offsite rear neighbour's trees during the development.

PBF is to be used in conjunction with sensitive landscape works for new / replacement surfaces within RPAs; these will be undertaken sensitively (detail to follow).

3.5.2 PBF is to be installed as illustrated on the TPP prior to site works commencing and is to remain in place until construction completion unless otherwise agreed by the council.

3.5.3 The PBF, due to the degree and proximity of work taking place around the trees, is to be *"a vertical and horizontal (scaffold) framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3m. Onto this, weld mesh panels are to be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and should not be used"* (see TPP illustration).

3.5.4 Tree protection signage denoting the words "TREE PROTECTION ZONE – KEEP OUT" is to be fixed onto each panel of the PBF (see TPP illustration).

3.6 Ground Protection

3.6.1 In order to avoid the need for ground protection for tree roots, staged development works are to be used in conjunction with the installation of the PBF; surface works within retained trees' RPAs are to be delayed until construction completion.

3.6.2 At the point of PBF being installed, the enclosed RPA sections become Construction Exclusion Zones (hereafter; CEZ) to protect the trees' rooting areas during construction.

3.6.3 Due to the PBF installation to exclude RPAs from the active site / working area (for the duration of works), construction related RPA incursion is not anticipated.

However, where the need for RPA access arises, it will be necessary to protect tree roots and their growing environment. If so, the advice of the consultant will be sought and the written permission of the council will be required.

3.7 Sensitive Ground Works (landscape works within RPAs)

3.7.1 The approved scheme concentrates on the ground floor rear extension, internal building works and a new basement, meaning that no direct RPA incursion is anticipated [other than for intended landscape works].

3.7.2 The landscape works are to follow an approved rear garden layout, retain the existing soil levels within RPAs (T1 and T2), landscape after construction completion, and works manually and sensitively to protect tree roots and their growing environment.

3.7.3 Where the new surfaces can use preferential surfaces to encourage percolation of surface water and encourage aerated soils with nutrient availability, this will maintain the existing conditions for tree root growth and is encourages where possible.

3.8 Additional Tree Protection Considerations

3.8.1 Consideration is required for material delivery, storage, handling and pollution control in relation to trees, such that the RPAs / CEZ is completely avoided and no run off or leaching can occur into said area. This is to be detailed in a 'construction management plan' and to be supplied by the client/contractor in addition to this advice.

3.9 Summary of Construction Restrictions

3.9.1 The following restrictions apply for tree protection purposes: as illustrated on the Tree Protection Plan (TPP/17266/01):

- a) No tree works are required or permitted as part of this planning permission, and no tree works are to be undertaken unless agreed with the council (subject to statutory considerations and exemptions).
- b) PBF is to be installed prior to site works commencing, i.e. the delivery of materials, site set up, site preparation, excavation, or construction as per the TPP (appended).
- c) Once PBF is in place the enclosed area is a Construction Exclusion Zone (no access); material delivery, storage and processing to be clear of tree crowns and RPAs.
- d) No chemicals or materials are to be transported or stored or used or mixed within an exposed RPA or Construction Exclusion Zone (CEZ).
- e) No fires are to be lit and no machinery, plant or vehicles are to be washed down within 10m of a tree's canopy or within a RPA or CEZ.
- f) During construction processes RPAs / CEZs may not be breached, i.e. no surface work, without the consultant's prior advice and council consent, and no mechanical digging or scraping is permitted within a RPA / CEZ.
- g) When all excavation and construction is complete, the rear garden PBF may be removed, existing hard surfaces within the rear garden may be manually removed and approved new hard landscape works completed; soil levels retained within RPAs.
- h) Only following hard landscaping completion can and any remaining soft landscaping / tree planting works be undertaken.

3.10 Additional Recommendations

3.10.1 This report is released to the client for them to distribute at their discretion. The consultant is available for any queries relating to this report and/or arboriculture.

3.10.2 This AMS and the TPP are to be approved by the council as a means of authorised tree protection measures of which all site personnel are to have access to a copy and the details herein are to be inspected as per s.3.2 for '*Arboricultural Monitoring / Supervision*'.

This concludes our advice.

Appendix I

Caveat

Any and all information supplied to Indigo Surveys Ltd by/on behalf of the client is assumed to be accurate unless otherwise informed. | This report is limited to the observations made on the date of inspection as detailed herein and any deletion, editing or alteration will result in the report being null and void in its entirety. | This report in its entirety may be deemed null and void if remedial works are undertaken on any area of the site, on or after the date of the survey. | No liability is assumed by the author or by Indigo Surveys Ltd for any misuse, misinterpretation or misrepresentation of this report. | This report is not valid in adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events. | No responsibility is assumed either by the author of this report or by Indigo Surveys Ltd for any legal matters that may arise as a consequence. | Neither the author nor Indigo Surveys Ltd will be required to attend court or give testimony as part of this agreement. | The responsibility for any works undertaken on the basis of the recommendations of this report does not form part of this agreement.

Appendix II

Terms and Definitions

“Arboriculturist” - person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

“Competent Person” - person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

“Topographical survey” - an accurately measured land survey undertaken to show all relevant existing site features. A method of carrying out topographical surveys is given in RICS specification Surveys of land buildings and utility services at scales of 1:500 and larger.

“BS5837 Tree survey” - should be undertaken by an arboriculturist to record information about the trees on or adjacent to a site. The results of the tree survey, including material constraints arising from existing trees that merit retention, should be used (along with any other relevant baseline data) to inform feasibility studies and design options. For this reason, the tree survey should be completed and made available to designers prior to and/or independently of any specific proposals for development.

“Tree categorization method” - trees should be categorised in accordance with the BS5837 cascade chart by an arboriculturist. This is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

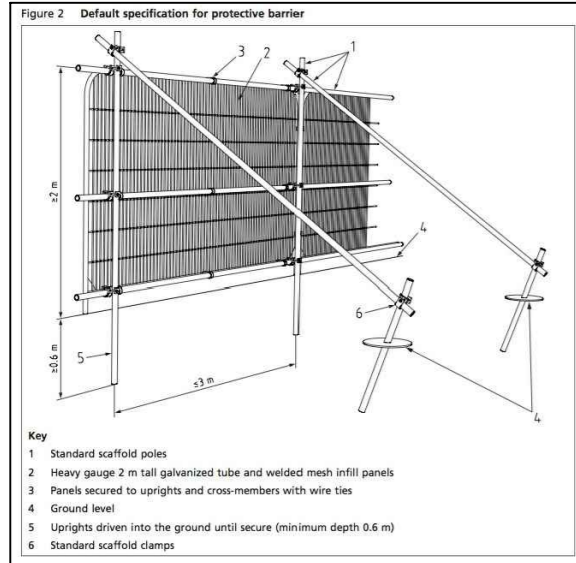
“Root protection area (RPA)” - layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority, shown as an arboricultural constraint in m². The radius is calculated using the BS5837 calculation method. An arboriculturist may change the shape of an RPA but not reduce its area.

“Arboricultural implications assessment” - a study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

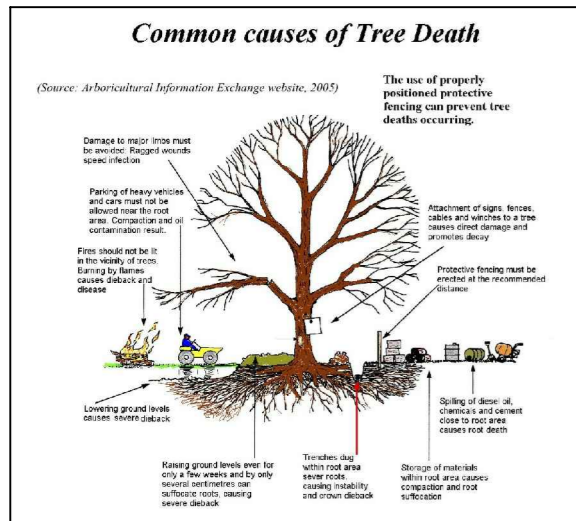
“Arboricultural method statement” - methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.

“Tree protection plan” - a scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.

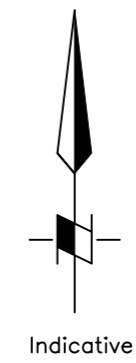
Protective Barrier Fencing – Design Options
(c) British Standards Institute (www.bsigroup.com)



Tree Protection Signage – Example



Common causes of Tree Death



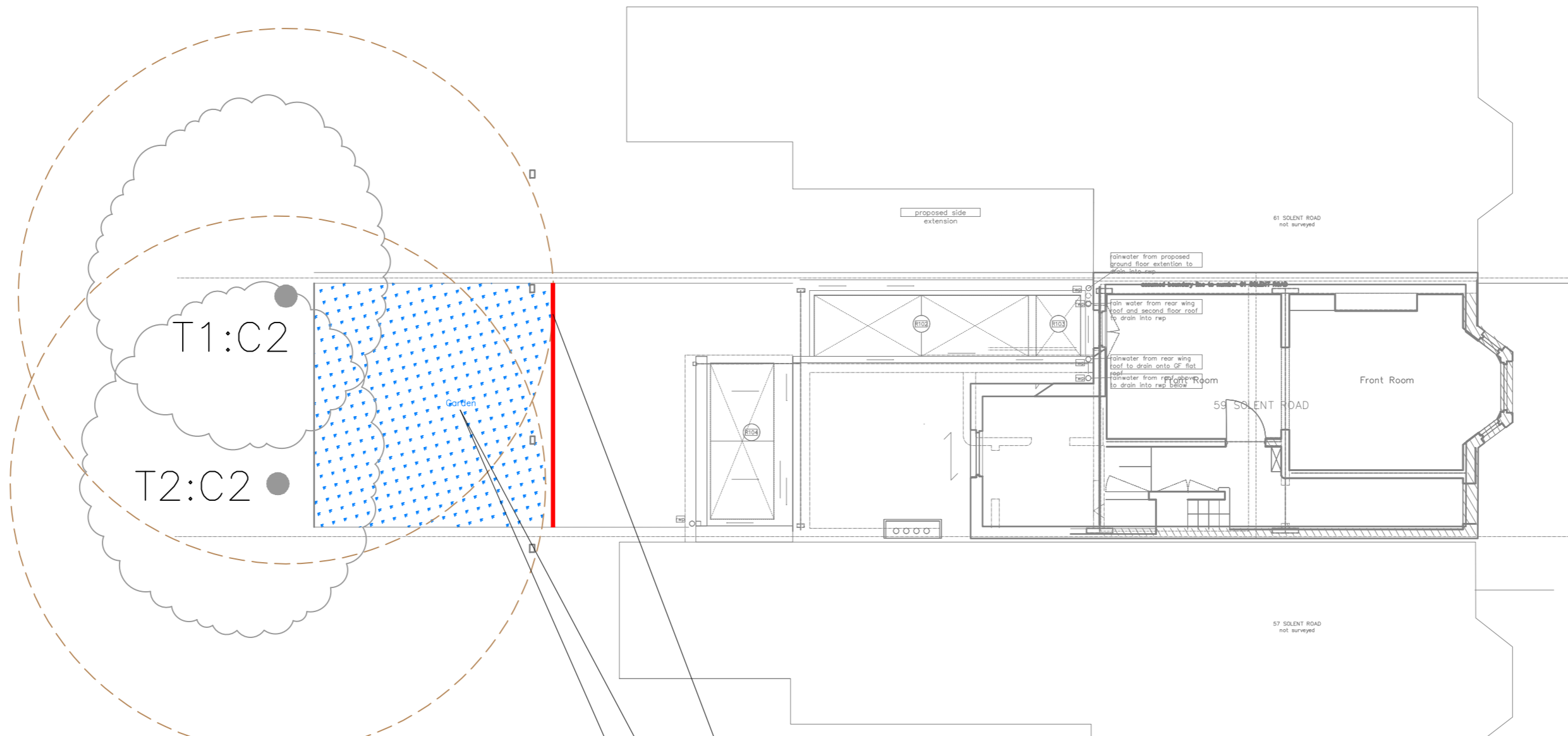
KEY

- Tree Crown Spread
- Root Protection Area (RPA)
- Tree Stem
- T1 Tree No.

Tree Condition Category

- A
- B
- C
- U

The surveyed trees are illustrated on this Tree Protection Plan as prepared in accordance with British Standard BS5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'



Protective Barrier Fencing (PBF) –
Temporary protective barrier fencing (fixed Heras panels) will be installed with tree protection signs, prior to any works on site and for the duration of excavation and construction for tree protection. It is to be installed at 5.0m distance from the rear boundary fence (to protect the trees' Root Protection Areas).

Construction Exclusion Zone –
No access is allowed into the area enclosed by PBF, no material storage or landscaping until construction completion, soil levels to be retained and manual works only for tree root protection (turf, planting etc.).

Sensitive landscape works (tree root protection) –

- All works are to retain the existing soil levels for tree root protection;
- All works within the fenced off area are not to be scheduled until excavation and construction completion;
- Pedestrian access only, manual works and hand held tools to be used (no driven or tracked machinery and no excavation).



/	Overlay of proposed scheme for review	AT	TB	18/07/17
REV.	DESCRIPTION	DWN	CHK'D	DATE

CLIENT	Mahesh Varia			
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PROJECT	17266 57 Solent Road, NW6 1TY			
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TITLE	Tree Protection Plan			
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DWN	DATE	CHK'D	DATE	APP'D	DATE	SCALE
AT	18/07/2017	TB	18/07/2017			1:100



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Drawing Number	A2
17266/TPP/01	REV. /

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TREE SURVEY IN ACCORDANCE WITH BRITISH STANDARD 5837:2012 'TREES IN RELATION TO DESIGN, DEMOLITION & CONSTRUCTION - RECOMMENDATIONS'

CLIENT: Mahesh Varia

PROJECT REF: 17266/A1

SITE: 57 Solent Road, NW6 1TY

CONTACT: /

SURVEY DATE: 13th July 2017

ARB CONSULTANT: Rod Benzies BSc

TREE REF. #	SPECIES	AGE	HEIGHT (in m)	CANOPY (in m) N - S - E - W				STEM (in mm)	RPA (in m)	CLEARANCE (in m)	1st BRANCH (in m)	VITALITY	LIFE EXPEC.	NOTES	BS CAT.		MANAGEMENT
T1	Elder; Sambucus, Sapindaceae	LM	8	4	3	2	4	470	5.6	1	1.5	Normal	10 - 20	Multi stem, situated in neighbouring property behind masonry wall. Unsighted assessment lower 1.5m not visible. Extensive boundary wall disruption in close proximity.	C	2	- Owner to monitor tree's growth rate and condition.
T2	Plum; Prunus, Rosaceae	LM	8	4	3	2	4	470	5.6	1	1.5	Normal	20 - 40	Situated in neighbouring property behind masonry wall. Unsighted assessment lower 1.5m not visible. "lopping" has taken place in the past.	C	2	- Owner to monitor tree's growth rate and condition.

Appendix III

Data Table: As appended (BS5837 Tree Survey Key & Table)

Tree Protection Plan: As appended (17266/TPP/01)