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ARBORICULTURAL CONSULTANCY M.D.A

# TREE SURVEY AND ARBORICULTURAL METHOD STATEMENT

A report to accompany a Planning Application for development at 62 Elsworthy Road, NW3 3BU

**Report by Dr Martin Dobson**

*1 October 2010*

Arboricultural Association® REGISTERED CONSULTANT

# Contents

## 1. Introduction

1.1 On 19 August 2010 Martin Dobson Associates were instructed by Wolff Architects to carry out a tree survey at 62 Elsworthy Road, London, NW3 3BU. The aim of the survey was to provide information that would assist in creating an appropriate design for proposed development at the property.

1.2 The British Standard 5837: 2005 *Trees in relation to construction – Recommendations* provides guidance on how to decide which trees are appropriate for retention within a development, the means of protecting trees to be retained during the development (which may include both demolition and construction work), and the means of incorporating trees into the developed landscape. This report complies with the recommendations of the British Standard.

1.1 Development proposals that take account of the presence of trees have been prepared in the light of the tree survey. The proposal the subject of this report is for the demolition of the garage and utility space to the western side of the building. In replacement the proposal seeks planning approval for the erection of a part two storey, part single storey extension to the rear and West elevation. To the rear of the property it is proposed to construct two bay windows in traditional style and form. It is also proposed to construct a basement level under the existing house and garden to expand the habitable accommodation space and include a swimming pool; the work includes the formation of a new light well in the rear garden and a smaller light well to the front.

1.2 Nine trees were surveyed and all but two of them are considered suitable for retention during and after development. The method of protecting the eight trees to be retained is described.

## 2. Tree Survey

2.1 The tree survey was carried out by Dr Martin Dobson on 1 September 2010.

2.2 Appended at **MD1** is a copy of the tree survey schedule which lists ten trees present within or near to the property. Details of tree dimensions and condition are given along with an appraisal of the suitability of the trees for retention within the proposed development. The explanation of abbreviations used in the schedule is given at the end of the table.

2.3 The site survey drawing appended at **MD2** shows the positions of the trees surveyed and gives a reasonable indication of their comparative branch spreads. The drawing has been colour coded as follows:

| | |
|---|---|
| A trees (high quality and value, minimum 40 years useful life) | LIGHT GREEN |
| B trees (moderate quality and value, minimum 20 years useful life) | MID BLUE |
| C trees (low quality and value, minimum 10 years useful life) | GREY |
| R trees (unsuitable or dead/dying/dangerous, less than10 years useful life) | RED |

2.4 It should be understood that no individual safety inspection has been carried out on any tree. Similarly, any suggestions for tree work should not be taken as a specification for tree works.

## 3. Landscape Appraisal of the Site

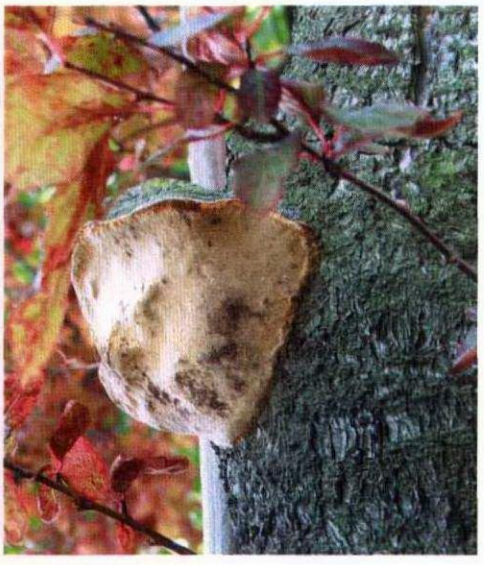
3.1 62 Elsworthy Road is located on the north side of the southern curve of Elsworthy Road very close to the junction leading into Wadham Gardens. It is situated in the south western

boundary of the London Borough of Camden, approximately two miles to the north of central London, mainly within the Parish of St. Mary the Virgin, Primrose Hill. The site backs onto Wadham Gardens to the North, with an access gate to the private park running along the northern boundary of the site. Despite not being a listed building, the property lies within the Elsworthy Road Conservation Area.

3.2 The road is characterised by large detached family homes with a reasonable sized frontage and small rear gardens backing onto communal gardens at the rear. The communal gardens contain a mature landscape comprising of lawns, shrubs and trees. The road in front of the property is lined with large trees which are predominantly London planes.

3.3 Immediately in front of 62 Elsworthy Road are three Council-owned mature Planes (T1, T2 and T5) together with a young Norway maple (T3). Due to their large size these trees are the dominant feature of the green landscape and together with the other street trees form an important amenity to the road which merits careful protection. All four street trees have therefore been given an A grading.

3.4 There is a single tree in the front garden of 62 Elsworthy Road (T4) which is a Purple plum. The tree's attractive purple foliage adds interest to the street scene but the tree has a limited safe life due to the fact that is infected with the decay fungus *Ganoderma* sp. at its base (below left) and with *Fomes fomentarius* (or possibly *Phellinus ignarius*) higher on the trunk (below right). These fungi will be degrading the strength of the wood and will ultimately cause the tree to fail. It has therefore been given a C/R grading. It is recommended that the tree should be felled and a replacement planted.



3.5 There are two small trees in the rear garden, T6 a Purple plum and T7 a Laburnum. Whilst both trees add some interest to the rear garden they have no public amenity value as they are unseen from any publicly accessible viewpoint. They are also largely disguised from view from neighbouring properties by larger shrubs and trees within the communal garden. The trees have poor form as they have been pruned unsympathetically in the past. They have therefore been classified as C grade trees. The British Standard advises that 'C category trees will not usually be retained where they would pose a significant constraint on development'. Both tees are in a position where, if they were to be retained, the proposed development would be prejudiced. It is therefore recommended that both trees be removed and replacements planted.

3.6 There are two small Lilacs (T8 and T9) just outside the boundary of the site. They are not of particularly good form and have been given a C classification. They do not interfere with the proposals and can therefore be retained with appropriate protection.

3.7 Nine trees have been surveyed and the largest of these (T1 – T3 and T5) are of the highest quality and should be carefully protected. The remaining five trees are not considered to be of any significance and have been classified as C grade trees. Of these, the Purple plum (T4) is considered to be unsafe and the Purple plum (T6) and Laburnum (T7) would interfere with the proposals if retained. It is therefore recommended that they be felled and replaced. The remaining two C grade Lilacs (T8 and T9) can be retained.

## 4. Root Protection Areas

4.1 Trees can very easily be damaged during construction activities through their branches being broken by traffic passing close to the canopy or by root severance during the digging of foundation or service trenches. The majority of roots are to be found in the upper 600 mm of soil and so even relatively shallow trenches can sever the majority of roots growing across the direction of the trench. Similarly, the diameter of tree roots tapers sharply within a few metres of the trunk of a tree, so that what might seem to an uninitiated site worker to be an insignificant root (perhaps only a couple of centimetres in diameter) may actually be highly important.

4.2 Tree roots can also be damaged indirectly, often inadvertently, through soil compaction, which disrupts soil structure and can lead to root death through the development of anaerobic soil conditions. Spillage of toxic materials (e.g. oil or diesel) can also result in root damage and ultimately the death of a tree.

4.3 Adequate protection, both above and below ground, is therefore essential for trees that are to be retained as part of a new development. The British Standard BS5837: 2005 *Trees in Relation to Construction - Recommendations* advises that there should be a root protection area (RPA) around trees which is kept free of all construction activities by means of an exclusion zone enforced by protective fencing and/or ground protection. The RPA is calculated as the area equivalent to a circle with a radius of 12 times the trunk diameter at a height of 1.5 m above ground level. Based on the tree survey data root protection areas (and radial distances from the trunk to be protected) have been calculated and these are illustrated at **MD2** and tabulated at **MD3**.

4.4 The proposed new layout and positions of protective fencing and ground protection are shown at **MD4** and **MD5**. It is proposed that part of the root protection area will be fenced and that some of it will be protected by ground protection in order to enable access to the site.

## 5. Method Statement for Tree Protection

5.1 **This report should be made available to and be read by all professionals involved with implementing any planning consent obtained before any demolition or construction activities commence on site. The site manager must inform site operatives of the content of this, or any subsequent, tree report and be responsible for enforcing root protection zones.**

5.2 The sequence of events on site is described below and methods necessary to avoid damage to tree roots and/or branches are detailed.

5.3 Prior to contracts being awarded an arboricultural consultant will be appointed to oversee tree protection for the duration of the contract. The arboricultural consultant will be consulted on any issues that may arise concerning trees and will visit the site as often as necessary to ensure that trees are protected and/or at the following key stages:

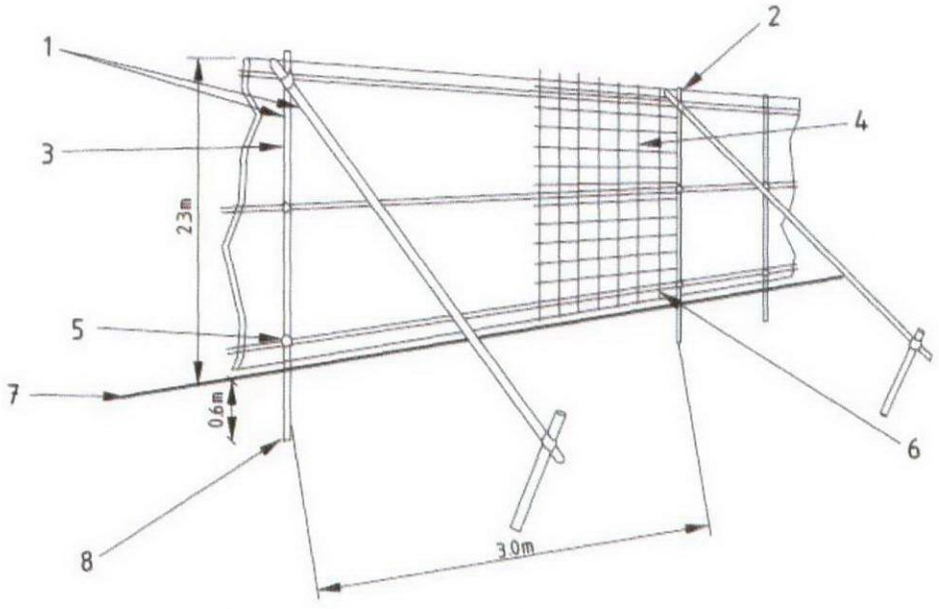
- Prior to contractors commencing works on site in order to meet with the supervising architect and/or the contractor's nominated site manager to ensure that the principles of tree protection are understood and the procedure, timescale and materials for installation of tree protection are agreed.

- Following installation of tree protection, but before any other works commence on site, to inspect and confirm that it is fit for purpose.

- At the completion of construction works to confirm that tree protection may be removed to enable final landscaping.

5.4 Protective fencing principally to protect the existing hedges (and ground protection if required – see 5.6 below) will be installed in the positions shown at **MD4** before any materials are delivered to site or demolition or construction work takes place. The fencing will consist of a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3 m (Figure 1). Onto this, weld mesh panels or shuttering board will be securely fixed with wire or scaffold clamps. Weld mesh panels on rubber or concrete feet will not be used as these are not resistant to impact and are too easily removed by site operatives.

**Figure 1**. Specification for protective fencing.




1 Scaffold poles

2 Uprights, to be driven into ground

3 Panels, secured to uprights with wire tires and where necessary scaffold clamps

4 Weldmesh, wired to the uprights and horizontals

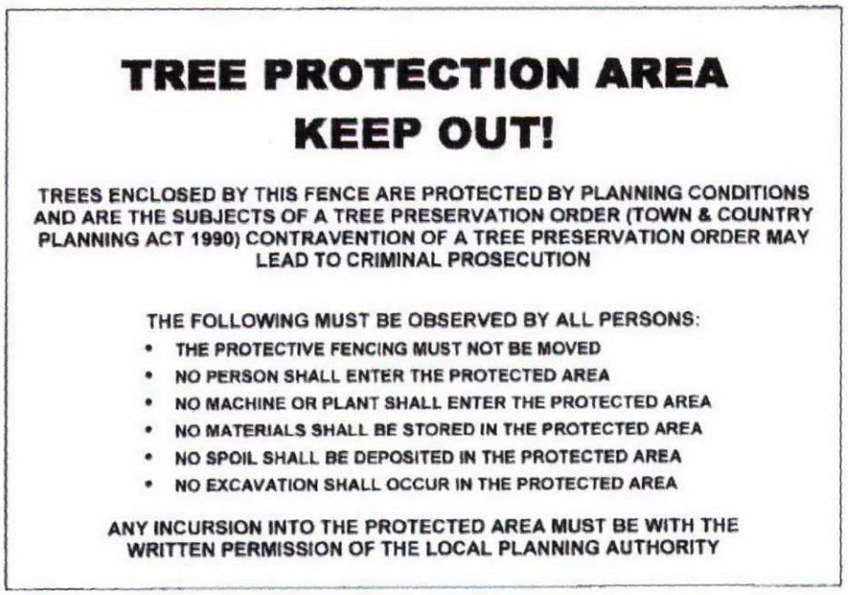
5 Clamp

6 Wire, twisted and secured

7 Ground level

8 Approx 0.6 m driven into the ground

**Figure 2**. Wording to be included in high visibility all-weather sign attached to protective fencing




5.5 High visibility all weather notices will be securely attached to the barrier around each protection zone with the wording as shown in Figure 2. Where long lengths of barrier are erected a sign will be attached at intervals of no less than 6 m.

5.6 Ground protection will be installed in the position showed at **MD4** if required. The front garden is already paved and the surface may be adequate to withstand loads without causing compaction of the underlying soil. However, the decision as to whether or not additional ground protection (in the form of an above ground load-bearing layer) is required will be determined by digging trial pits to establish whether the existing surface has a minimum depth of 200 mm. If it does not the load bearing layer must be made up to a 200 mm thickness using sharp sand laid over a geotextile such as Terram and provided with a wearing surface of steel or high density plastic road plates.

5.7 Once tree protection is in place then excavation and construction can begin. Fencing will not be taken down under any circumstances during construction unless with the express approval of the Council. If in any doubt the site manager must contact the nominated arboricultural consultant.

***Burning of waste***

5.8 No fires at all will be lit on site due to the danger of scorching of leaves and branches of overhanging trees but rather all waste materials will be removed and taken to landfill or appropriate recycling facilities.

***Changes in level***

5.9 There are no proposed changes in level within tree root protection areas.

***Space for machinery, parking of vehicles, storage of materials and site huts***

5.10 All machinery required on site will operate outside of root protection areas, on areas protected by ground protection or within the footprint of the proposed new basement.

5.11 Parking of vehicles will be off-site.

5.12 Delivery vehicles will park off site and storage of materials will be at the front of the property within the existing front garden but outside fenced areas or at the rear. Site huts will also be located at front of the property, either outside root protection zones or suitably supported to avoid soil within the root protection zone.

***Services***

5.13 Incoming and outgoing services will all be installed utilising existing service runs. There should therefore be no need to dig service trenches within root protection zones. If, however, new services are required at a deeper level this will be done using boring techniques and not by digging open trenches.

***Landscaping***

5.14 Once construction has demonstrably finished (to the satisfaction of the nominated arboriculturist) the fencing and ground protection may be removed in order to allow final landscaping to be undertaken. Landscaping will not involve any changes in soil levels or the digging of any trenches within root protection areas.

## 6. Conclusions

6.1 A survey of trees in the garden of and adjacent to 62 Elsworthy Road London has been carried out. Nine trees were surveyed and six of these (T1 – T3, T5 and T8 – T9) were considered suitable for retention within the development. Three trees were considered unsuitable for retention (T4, T6 and T7)

6.2 Methods for ensuring the protection of the six trees to be retained have been described.

6.3 It is considered that the proposed development should pose no threat to trees to be retained and is sympathetic to the sylvan character of the area.

**Dr Martin Dobson**
*BSc DPhil FArborA*

1 October 2010

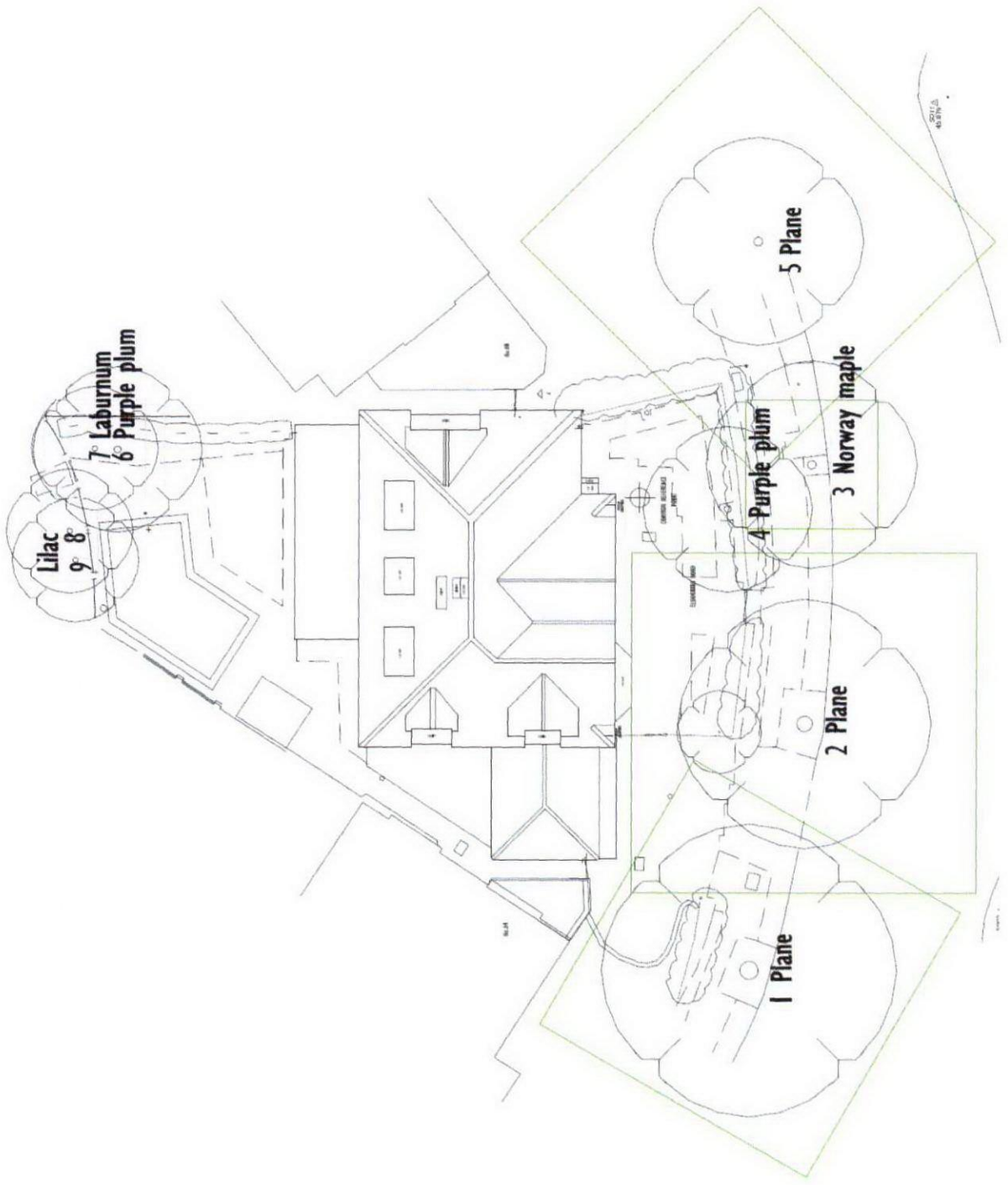
## APPENDIX MD1
## Tree survey schedule (BS5837: 2005) for 62 Elsworthy Road

| Tree No. | Species | Height (m) | Trunk diameter (mm) | Crown spread (m) | Height of crown clearance (m) | Age class[1] | Physiological condition | Structural condition | Useful life (y) | Management notes | BS5837 Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 | Plane | 14.0 | 670 | N 5.0<br>S 6.0<br>E 6.0<br>W 5.0 | 6.0 | M | Good | Good | 40+ | History of crown reduction | A |
| T2 | Plane | 15.0 | 754 | N 6.0<br>S 6.0<br>E 6.0<br>W 6.0 | 6.0 | M | Good | Good | 40+ | History of crown reduction | A |
| T3 | Norway maple | 13.0 | 286 | N 4.0<br>S 4.5<br>E 4.5<br>W 4.5 | 4.0 | Y | Good | Good | 40+ | | A |
| T4 | Purple plum | 7.0 | 445 | N 3.0<br>S 3.0<br>E 4.0<br>W 4.0 | 3.0 | M | Fair | Poor | <10 | Decay: *Ganoderma* at base, *Phellinus* higher up | C/R |
| T5 | Plane | 14.0 | 732 | N 5.0<br>S 5.0<br>E 5.0<br>W 5.0 | 6.0 | M | Good | Good | 40+ | | A |
| T6 | Purple plum | 6.0 | 220 | N 2.0<br>S 4.0<br>E 2.5<br>W 2.5 | 2.0 | Y | Good | Good | 10 – 20 | Has been crown lifted in the past | C |
| T7 | Laburnum | 5.0 | 200 | N 3.0<br>S 1.5<br>E 2.0<br>W 1.5 | 3.0 | MA | Good | Good | 10 – 20 | Large decayed wound on a main branch – remove branch | C |
| T8 | Lilac | 4.0 | 120 | N 1.0<br>S 2.0<br>E 1.0<br>W 1.5 | 1.5 | MA | Good | Good | 10 – 20 | | C |
| T9 | Lilac | 4.0 | 100 | N 2.0<br>S 1.5<br>E 1.0<br>W 1.5 | 1.0 | MA | Good | Good | 10 – 20 | | C |

[1] Y = Young (<1/3 life expectancy). MA = Mid aged (1/3 – 2/3 life expectancy). M = Mature (>2/3 life expectancy). OM = Over mature (reaching end of safe useful life)

## APPENDIX MD2

**Site survey drawing showing existing plot layout with tree numbers and BS5837 colour codes (A – Green, B – Blue, C – Grey) and root protection areas (squares)**

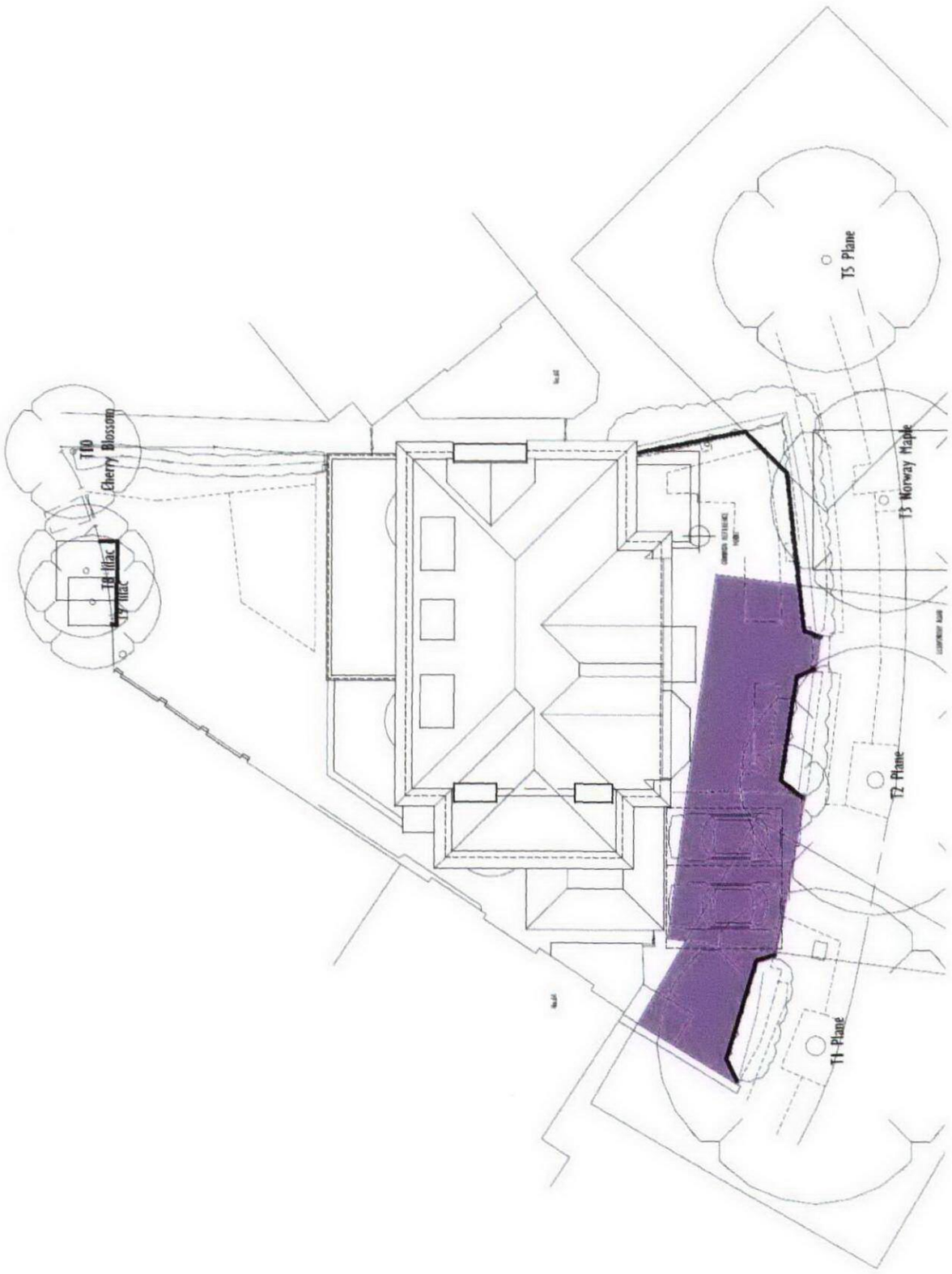


## APPENDIX MD3
## BS5837 schedule of protection zones

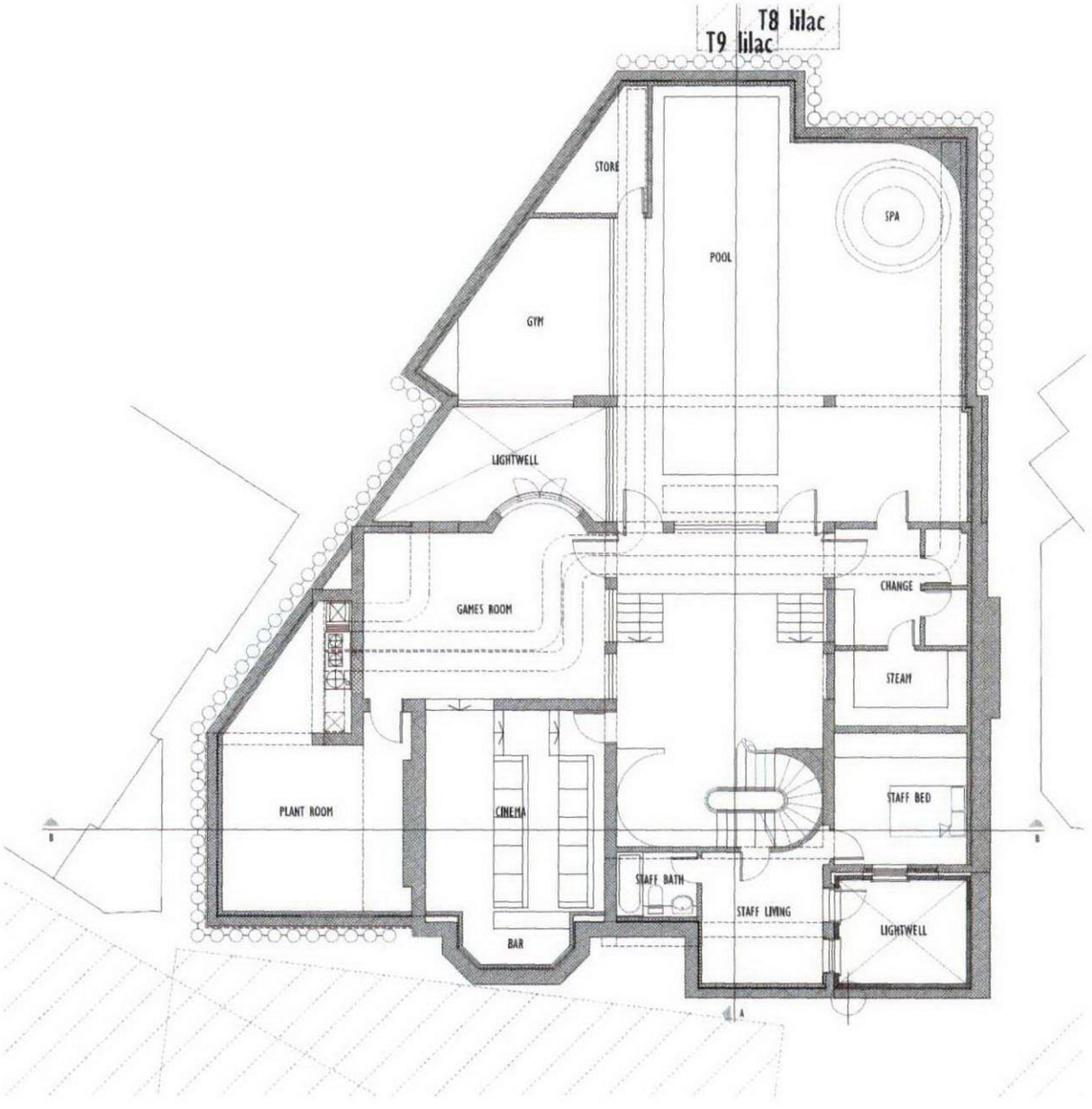
| Tree No. | Species | Trunk diameter (mm) | BS5837: 2005 Root protection area, RPA, ($m^2$) | BS5837: 2005 Radial protection distance (m) | BS5837: 2005 Length of side of RPA if represented as a square (m) |
|---|---|---|---|---|---|
| T1 | Plane | 670 | 203.1 | 8.0 | 14.3 |
| T2 | Plane | 754 | 257.2 | 9.0 | 16.0 |
| T3 | Norway maple | 286 | 37.0 | 3.4 | 6.1 |
| T4 | Purple plum | 445 | 89.6 | 5.3 | 9.5 |
| T5 | Plane | 732 | 242.4 | 8.8 | 15.6 |
| T6 | Purple plum | 220 | 21.9 | 2.6 | 4.7 |
| T7 | Laburnum | 200 | 18.1 | 2.4 | 4.3 |
| T8 | Lilac | 120 | 6.5 | 1.4 | 2.6 |
| T9 | Lilac | 100 | 4.5 | 1.2 | 2.1 |

## APPENDIX MD4

**Proposed plan showing location of tree protection zones, protective fencing (heavy black lines) and ground protection (purple shading)**



**APPENDIX MD5**
**Proposed basement plan**



## APPENDIX MD6
## Qualifications and Experience

Dr Martin Dobson has been engaged in research and advisory work on trees since graduating in 1986 with a BSc (Hons) Degree in Biology. Subsequent postgraduate research led to the award of a Doctor of Philosophy (DPhil) Degree in Tree Physiology in 1990.

Postgraduate studies began in 1986 at the University of Ulster and continued in 1987 at the Forestry Commission's Research Station in Hampshire and focussed on the influence of air pollution on trees. Upon completion of this research in 1989 Dr Dobson was employed by the Forestry Commission and worked in both the Tree Pathology and Environmental Research Branches. During the next six years he was responsible for Department of Environment research contracts focussing on air pollution, climate change, de-icing salt damage to trees, woodland establishment on landfills and tree root research. He has authored two books: *De-icing Salt Damage to Trees and Shrubs* and *The Potential for Woodland Establishment on Landfill Sites.* He concluded his time at the Forestry Commission as Project Manager for research into the interaction between trees, roots and clay soils which included laboratory investigations, testing of root barriers and a three-year field-scale monitoring programme investigating the influence of woodland and grassland on the moisture status of clay soils.

In 1995 Martin joined the Arboricultural Advisory and Information Service as a senior Arboricultural Advisor. The AAIS advised the (then) Department of the Environment on policy matters and is the principal source of technical advice and information to the arboricultural profession as well as landscape architects, engineers, the horticultural industry and private individuals. A large proportion of advisory work focuses on issues relating to trees and buildings.

In 1997 he started an arboricultural consultancy practice specialising in subsidence and tree root claims, planning and development, tree safety issues and disease diagnosis. He has been a local authority retained consultant providing expertise on tree protection practice and legislation from 1999 - 2006 and has dealt with several thousand Tree Preservation Order and Conservation Area applications.

He has extensive experience as an Expert Witness in the High Court, County Court and Magistrates Court.

He is an examiner for the Professional Diploma in Arboriculture for the Royal Forestry Society and has been a part-time lecturer for the Middlesex University Countryside Management MSc course. He has further significant experience lecturing at technical conferences and seminars.

In addition to over 30 publications in scientific and technical journals he is the author of Arboriculture Research and Information Note 130/95/ARB *Tree Root Systems*, and leading author of:

*Driveways Close to Trees.* Arboricultural Practice Note 1. AAIS, Farnham.
*Trees in Dispute.* Arboricultural Practice Note 3. AAIS, Farnham.
*Root Barriers and Building Subsidence.* Arboricultural Practice Note 4. AAIS, Farnham.

He is a Fellow and Registered Consultant of the Arboricultural Association.