

## **TREE SURVEY AND ARBORICULTURAL METHOD STATEMENT**

Report in support of an application for the erection of a three storey rear extension with first floor terrace and side extensions following the demolition of the existing side and rear extensions between the lower and first floors, demolition of the existing chimney stack; erection of a hip to valley roof extension with front and rear dormer with new hard and soft landscaping arrangement at 3 Ranulf Road, London, NW2 2BT.

### **Report by Dr Martin Dobson**

*BSc, DPhil, FArborA, MEWI*

*Registered Consultant of the Arboricultural Association*

Instructed by Haroon A. Mann

*7<sup>th</sup> January 2021*

MDA reference N87



# Contents

Part 1	Introduction	Page 3
Part 2	Tree survey	Page 4
Part 3	Soil assessment	Page 6
Part 4	Arboricultural impact assessment	Page 7
Part 5	Arboricultural method statement and tree protection plan	Page 8
Part 6	Conclusions	Page 13

***There are six appendices***

MD1	Tree survey schedule (BS5837:2012)	Page 14
MD2	Tree constraints plan	Page 15
MD3	Schedule of root protection areas	Page 16
MD4	Tree protection plan	Page 17
MD5	Induction sheet	Page 18
MD6	Qualifications and experience	Page 19

## 1 Introduction

- 1.1 Martin Dobson Associates were instructed by Haroon A. Mann to carry out a tree survey at 3 Ranulf Road, London, NW2 2BT. The aim of the survey was to provide information that would assist in creating an appropriate design for proposed development taking into account the presence of trees on or near to the property.
- 1.2 The British Standard 5837: 2012 *Trees in relation to design, demolition and construction – Recommendations* provides a framework for considering trees in the planning process. It gives guidance on categorising the qualities of trees in order to enable decisions to be made as to which trees are appropriate for retention within a development. It then advises on options for protecting trees to be retained during the development (at all stages including demolition, construction and hard landscaping), and the means of incorporating trees into the developed landscape. This report complies with the recommendations of BS5837: 2012.
- 1.3 Development proposals have been prepared in the light of the tree survey that take account of the presence of trees. The proposals the subject of this report are to erect a three storey rear extension with first floor terrace and side extensions following the demolition of the existing side and rear extensions between the lower and first floors, demolition of the existing chimney stack; erection of a hip to valley roof extension with front and rear dormer with new hard and soft landscaping arrangement.
- 1.4 Planning permission was granted by the London Borough of Camden on 13<sup>th</sup> December 2012 for the '*Erection of building comprising basement, lower ground, ground and 2 upper floors to provide a single-family dwelling and associated landscaping following demolition of the existing dwellinghouse*' under reference 2012/1898/P. That permission lapsed on 13<sup>th</sup> December 2015 but demonstrates that the principle of development of this site, on a very similar footprint, has been deemed acceptable.
- 1.5 Seven trees were surveyed and it is proposed to retain all seven. The retained trees will be protected during and after development.

## 2. Tree survey

2.1 Ranulf Road is a residential street located in West Hampstead, north London. The area is characterised by large detached houses which generally have small front gardens but substantial gardens to the rear. Number 3 Ranulf Road is located on a curve on the southern side of the road and the plot is narrowest at the front widening out towards the rear. The house is therefore smaller than its neighbours. The plot benefits from a large south facing, but somewhat neglected, rear garden with a number of trees and shrubs. The elevated position of the rear of the house relative to the rear garden and beyond enables views over the open space of Hampstead Cemetery and neighbouring playing fields.

2.2 Martin Dobson Associates Ltd have carried out a survey of the trees at or adjacent to 3 Ranulf Road as instructed by Haroon Mann. The survey was carried out in line with British Standard 5837: 2012 *Trees in relation to design, demolition and construction - Recommendations*. Appended at **MD1** is a copy of the tree survey schedule which lists seven trees present within or adjacent 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 Information from the survey enabled suitable root protection areas to be calculated for each tree and these are shown on the plan appended at **MD2** and in the schedule at **MD3**. The positions of the surveyed trees and a reasonable indication of their comparative branch spreads are shown on the plan. The drawing has been colour coded as follows:

A trees (high quality and value, minimum 40 years useful life)	<b>LIGHT GREEN</b>
B trees (moderate quality and value, minimum 20 years useful life)	<b>MID BLUE</b>
C trees (low quality and value, minimum 10 years useful life)	<b>GREY</b>
U trees (unsuitable or dead/dying/dangerous, less than 10 years useful life)	<b>RED</b>

2.4 A mature Pine tree (T1) is located in the front garden of No. 5 Ranulf Road and is seen illustrated on the title page of this report. The tree is prominent and makes a useful contribution to the street scene. The tree leans across the frontage of No. 3 thereby causing some shading to the front of the property but also provides a degree of screening and privacy to upstairs windows. The lean is not considered to indicate any unreasonable hazard. Damage has been caused by the tree's roots to a single skin low boundary wall and it is likely that the wall will need to be repaired or rebuilt at some time in the foreseeable future. T1 is considered to have a moderate quality and value and is therefore regarded as a category B tree.

2.5 At the lower end of a sloping planting bed to the rear of the patio leading away from the lower ground floor the planting bed there is a Prunus (T2) which seems to be the largest individual in what may once have been a Blackthorn hedge. The tree has no particular merits and is of low value and has therefore regarded as being category C. T3 is a mature Ash tree located in the neighbouring garden at No. 5. The tree leans slightly to the north and there is evidence that it was reduced in size some 25 or so years ago. The tree has a reasonable shape and form with no obvious defects and is considered to be of high value and has therefore been categorised A. A further tree in the garden of No. 5 is a mature Cypress (T4) which has been topped and appeared to be suffering from a fungal shoot infection called Coryneum canker.

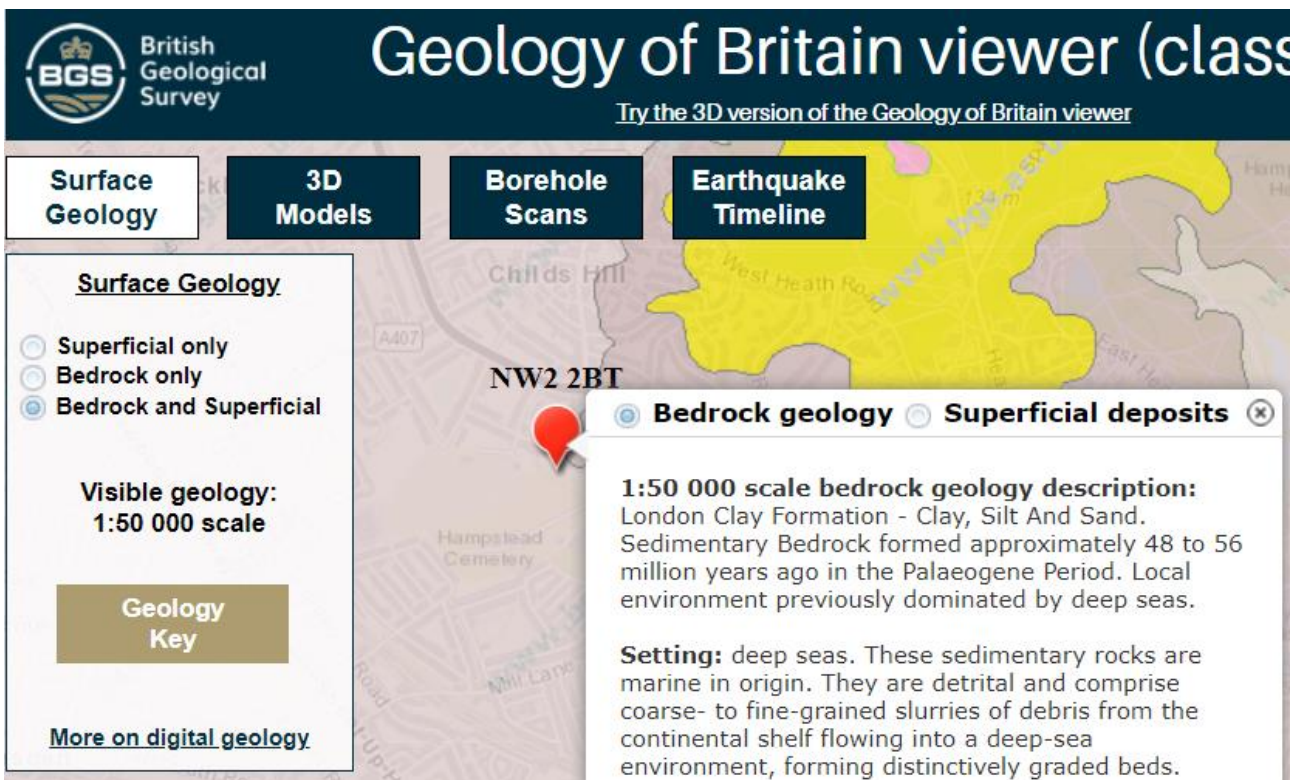
The tree is not visually attractive and is considered to be of low value with a limited useful life and has therefore been categorised C.

- 2.6 A relatively young Cypress (T5) standing in the centre of the rear half of the rear garden appears out of place with the rest of the planting and unduly dominates the garden even though it has been topped in the past to a height of about 6 metres. A mature Wisteria growing next to it has branches extending into its crown. The tree has a limited useful life and is considered to be a low quality tree and has therefore been categorised C. A young Holly (T7) is also considered to be of low value and has been categorised C as has a mature Pear (T7). The rear boundary of the site is made up of a mixture of Camellias, Holly, Laburnum, Yew and Privet which have no individual value but together form an effective and attractive screen but are remote from the proposed development.
- 2.7 All seven of the trees surveyed will be retained.

### 3. Soil assessment

- 3.1 BS5837: 2012 advises that soil properties should be considered as part of a tree survey report. This is necessary because trees can cause damage to structures founded on soils that shrink and swell with changes in moisture content (principally clays). Such movement is exacerbated by the influence of trees and therefore if a shrinkable soil is suspected foundations should be designed to extend below the likely zone of seasonal moisture change.
- 3.2 The British Geological Survey 1: 50,000 scale map indicates that the underlying geology of the site is shrinkable London Clay Formation – Clay, Silt and Sand (Figure 1). Thus, foundations should be designed to take account of trees. If site specific investigations confirm shrinkable clay then foundations will be designed with reference to the National House Building Council's Standards Chapter 4.2 *Building near trees*.

**Figure 1.** British Geological Survey 1: 50,000 scale map showing that the site is underlain by the Seaford Chalk Formation - Chalk





## **4. Arboricultural impact assessment**

- 4.1 The purpose of an arboricultural impact assessment (AIA) is to evaluate the direct and indirect effects of proposed development on trees and, where necessary, to consider appropriate mitigation. It should set out which, if any, trees are to be removed to facilitate the development and should consider the possible effects on retained trees of potentially damaging activities on the site (for example changes in ground level and installation of below ground services). Requirements for access around trees should be considered and potential conflicts identified, for example, where branches overhang the development area and may require pruning.
- 4.2 Mitigation for any issues identified should be proposed and addressed in the arboricultural method statement (AMS).

### ***Tree removals***

- 4.3 No trees are proposed to be removed as part of the development proposals.

### ***Tree pruning***

- 4.4 No pruning work is required to facilitate the proposed development as there is sufficient space between the buildings and retained trees for all works to take place without conflicts arising.

### ***Tree protection***

- 4.5 Trees T1 – T7, plus the remaining trees at the end of the garden, are to be retained and will be protected from mechanical damage to their trunks, branches and roots by the installation of 2 m high protective fencing to create a construction exclusion zone (CEZ) to exclude site workers, machinery and storage of materials. There is sufficient space outside the CEZ for all construction activities to take place without creating pressure on tree protection.
- 4.6 The RPA of T1 extends into the front garden of the property, which is currently largely paved. The paving will remain in place during the development and any exposed soil, and paving, will be covered by ground protection to create a physical barrier between the soil and construction activities and a load-suspension platform to prevent compaction of the underlying soil.

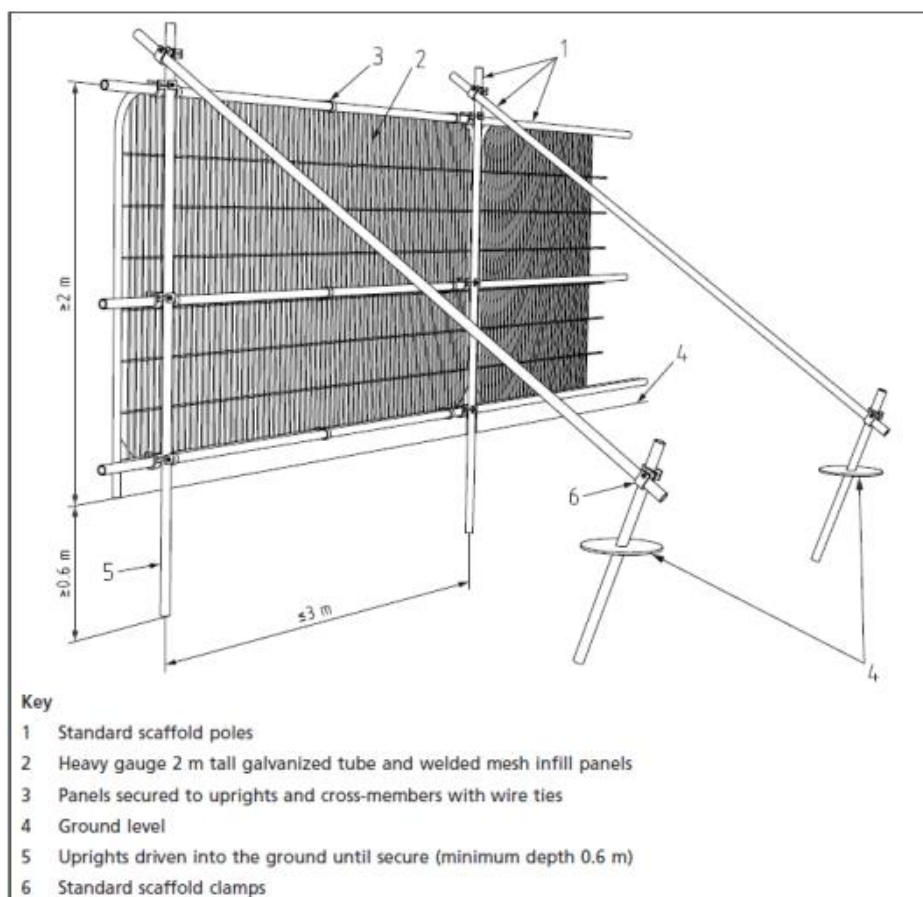
## 5. Arboricultural method statement and tree protection plan

- 5.1 Trees can very easily be damaged during construction activities through their branches being broken by construction 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 a significant number 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 few centimetres in diameter) may actually be highly important.
- 5.2 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. Protection of the soil around trees by means of a construction exclusion zone (CEZ) is therefore vitally important in order to preserve roots undamaged.

### Fencing and ground protection

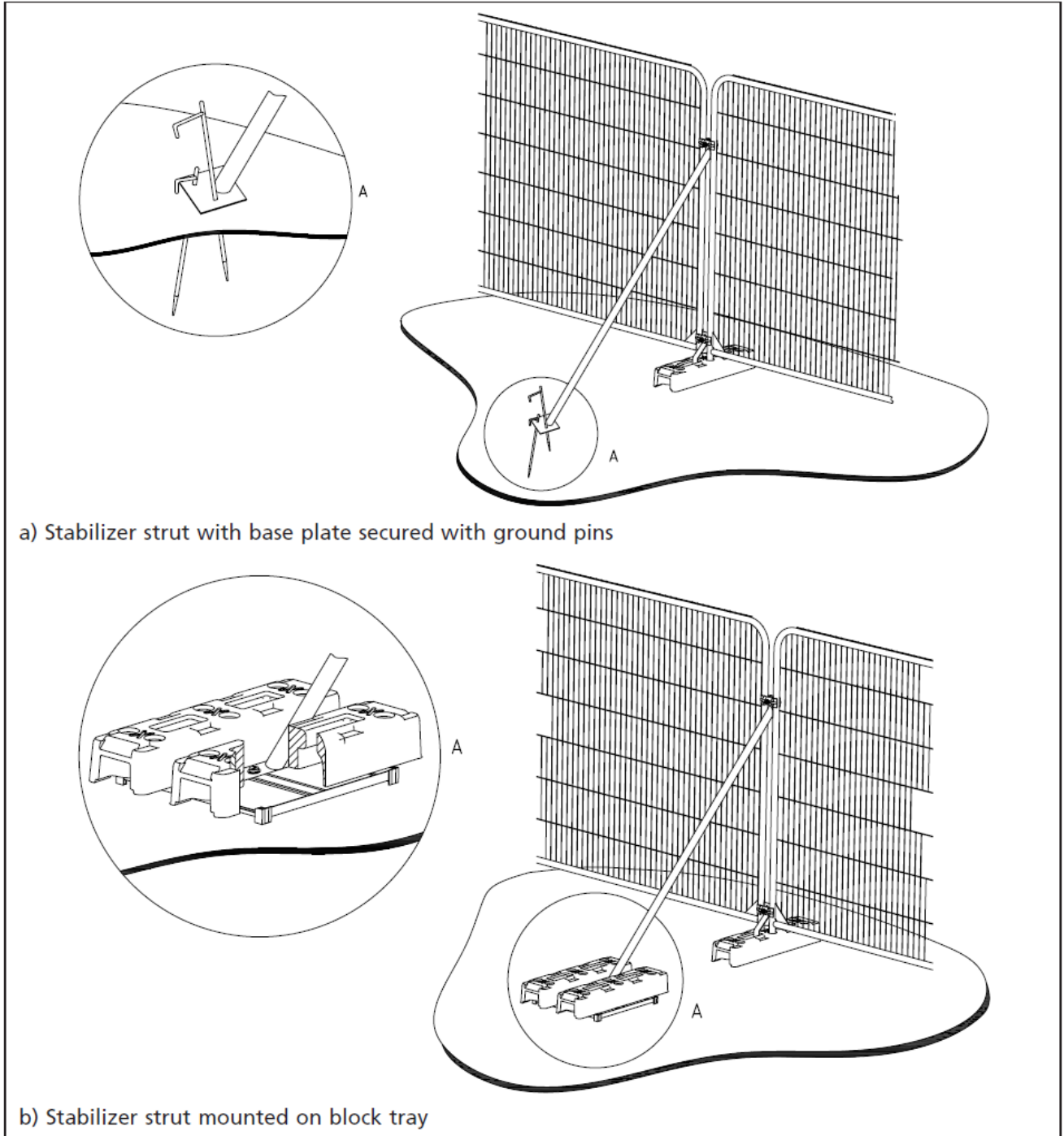
- 5.3 Tree protection will comprise of 2 m tall fencing installed in the positions shown at **MD4** before any demolition takes place or materials are delivered to site or construction commences. The fencing will consist of a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3 m (Figure 2). Onto this, weld mesh panels or 2 m high shuttering board will be securely fixed with wire or scaffold clamps. Un-braced weld mesh panels on unsecured rubber or concrete feet will not be used as these are not resistant to impact and are too easily removed by site operatives. An alternative system of bracing which does not require a scaffold framework is shown in Figure 3.

**Figure 2.** Diagram to illustrate design of protective fencing with scaffolding anchored into the ground





**Figure 3.** Diagram to illustrate alternative design of protective fencing



**Figure 4.** Photograph to illustrate installed protective fencing



5.4 High visibility all weather notices at a size no less than A3 will be securely attached to every second panel of the barrier around the CEZ with wording as shown in Figure 5.

Figure 5. Wording to be included in high visibility all-weather sign attached to protective fencing



5.5 In order to allow access for construction workers at the front of the development it is proposed that part of the RPA of T1 will be protected by ground protection. This area, shaded orange on the tree protection plan (MD4), will be covered by a permeable geotextile such as Terram. Onto this will be placed treated timber (100 mm x 80 mm) at spacings of no more than 1 m. The area between the timber bearers will be filled with a compressible material such as woodchips and will then be covered by 20 mm thick marine ply which will be screwed down onto the timber (Figures 6 and 7). The plywood may need to be coated with a non-slip paint.

Figure 6. Specification for ground protection

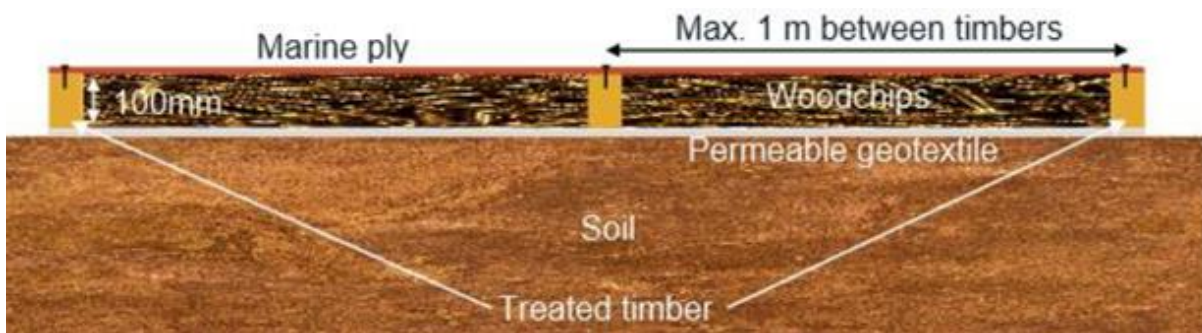


Figure 7. Plywood sheeting supported by timber bearers with woodchip infill used as ground protection for parts of the RPA outside fencing.





## **Arboricultural supervision**

- 5.6 It is recommended that a project arboricultural consultant is appointed to oversee tree protection for the duration of the construction contract. If appointed, the project arboriculturist 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:
- Following installation of tree protection but prior to any works commencing on site to confirm that it is fit for purpose;
  - At any time that there are potential conflicts with tree protection;
  - At the completion of construction works to confirm that tree protection may be removed to enable final landscaping.
- 5.7 The site manager/foreman will be fully briefed by the project arboriculturist on tree protection measures and procedures before any workers or sub-contractors are permitted onto the site. Following induction, a copy of the Induction Sheet (**MD5**) will be provided to and be signed by the site manager/foreman in recognition of acceptance of their role in enforcing day to day tree protection.
- 5.8 All contractors involved in the project have a duty to comply with all the specified tree protection measures and all workers will be provided with induction by the site manager/foreman and be required to sign an Induction Sheet confirming they have understood the protection measures. Signed sheets will be kept on site for inspection.
- 5.9 No enabling works will take place until after tree protection has been installed, inspected and approved as fit for purpose.
- 5.10 Fencing and ground protection will not be removed under any circumstances during construction unless with the express approval of the local authority. If in any doubt the site manager must contact the project arboricultural consultant.

## ***Burning of waste***

- 5.11 No fires will be lit on site within 3 m of root protection areas due to the danger of scorching of leaves and branches of overhanging trees.

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

- 5.12 All machinery required on site will operate outside of root protection areas or from the ground protection or the driveway. Site accommodation, if required, will be located outside root protection areas.
- 5.13 Delivery vehicles will park in the road and storage of materials will be outside root protection areas. At each delivery, where materials are unloaded by crane, a banksman will be present to ensure that sufficient clearance is allowed for to avoid conflict with branches of T1. Any incidents must be reported to the project arboriculturist.

## ***Services***

- 5.14 The proposed layout of new incoming (water, gas and electricity) and outgoing (foul sewer) services, if required, is not yet established but they should be installed outside root protection areas. If it is necessary for a trench to be dug through an RPA a specific method statement will be required which will need to specify that the trench will be hand dug and that care will be taken to preserve all roots encountered which are larger than 25 mm diameter.

## ***Landscaping***

- 5.15 Once construction has demonstrably finished (to the satisfaction of the project arboriculturist) fencing may be removed in order to allow final landscaping to be undertaken. Landscaping plans will not involve any changes in soil levels, digging of any trenches or construction of masonry or retaining walls within root protection areas.

## 6. Conclusions

- 6.1 A survey of trees in the garden of and adjacent to 3 Ranulf Road, London has been carried out in accordance with British Standard 5837: 2012 *Trees in Relation to Design, Demolition and Construction - Recommendations*. Seven trees were surveyed and out of these one was considered to be a high value category A tree (Ash T3), one was considered to be a moderate value category B tree (Pine T1) and the remainder were considered to be category C trees.
- 6.2 It is proposed that the seven surveyed trees will be retained and will be carefully protected during and after development.
- 6.3 Methods for ensuring the protection of the seven trees to be retained have been described.
- 6.4 It is considered that the proposed development will not pose any threat to the health and safety of the trees to be retained.

## APPENDIX MD1

Tree survey schedule (BS5837: 2012) for 3 Ranulf Road

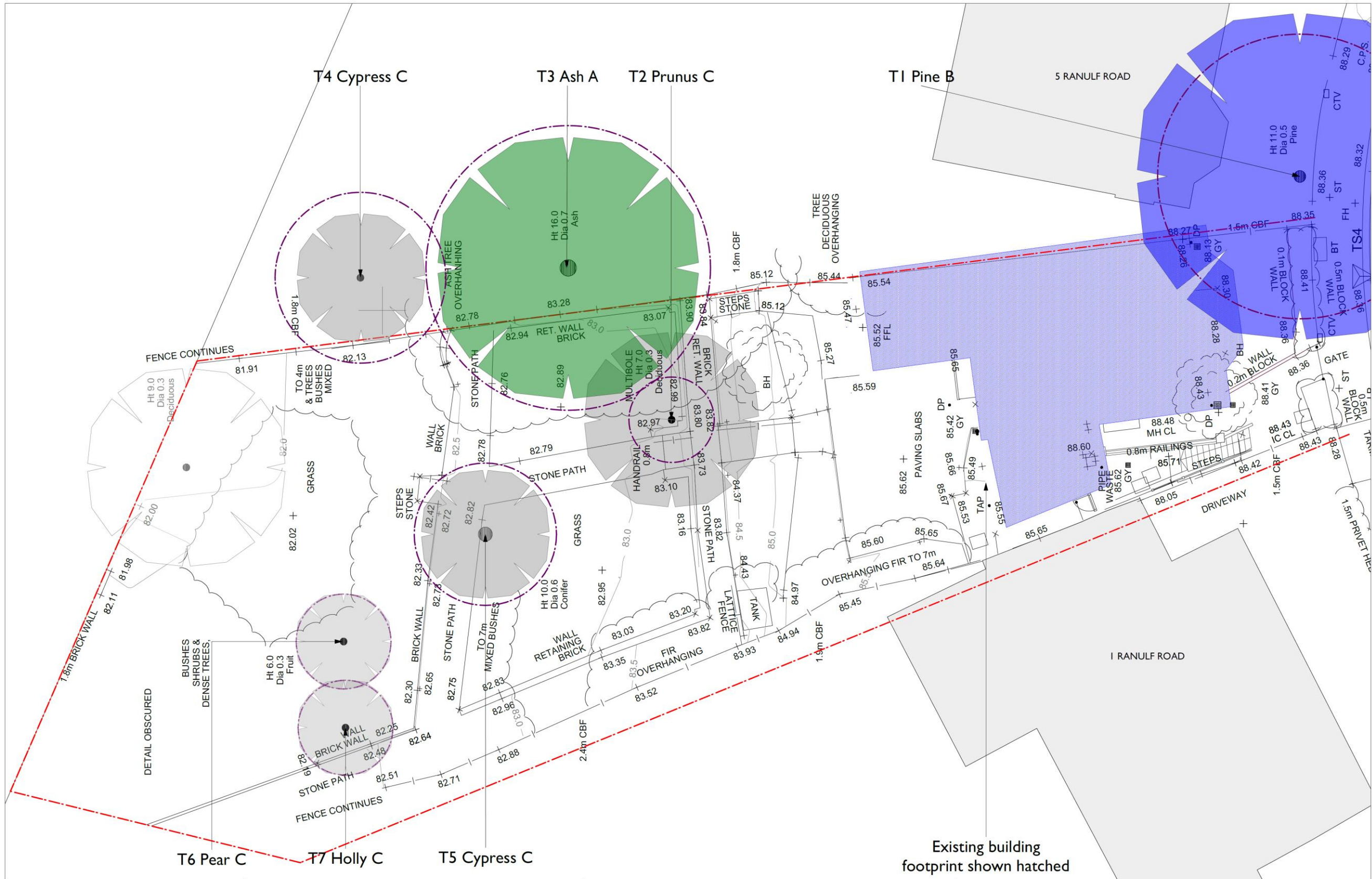
Tree No.	Species	Height (m)	Trunk diameter (mm)	Crown spread (m)	Height of crown clearance (m)	Age class <sup>1</sup>	Physiological condition	Structural condition	Useful life (y)	Management notes	BS5837 Category
T1	Pine	10.0	500	N 5.0 S 3.0 E 5.0 W 1.0	5.0	M	Good	Good	40+	Leans to E but not currently dangerous. Local root damage to boundary wall	B
T2	Prunus	5.0	100 90 70	N 3.0 S 3.0 E 3.0 W 2.0	2.0	MA	Good	Good	20 - 40	Part of out-grown internal hedge	C
T3	Ash	14.0	500	N 10.0 S 4.0 E 6.0 W 6.0	7.0	MA	Good	Good.	40+	Tree of good form with slight lean to N Previously reduced > 25y ago.	A
T4	Cypress	9.0	300	N 3.0 S 3.0 E 3.0 W 3.0	3.0	MA	Good	Fair	<10	Topped in the past to curtail height. Possible infection with Coryneum canker	C
T5	Cypress	6.0	250	N 2.0 S 2.0 E 2.0 W 2.0	1.0	Y	Good	Fair	<10	Small tree of poor quality in inappropriate location	C
T6	Holly	5.0	200 at ground level	N 1.5 S 1.5 E 1.5 W 1.5	0.0	Y	Good	Good	40+	Multi-stem tree of no particular importance	C
T7	Pear	6.0	120 120	N 2.0 S 2.0 E 2.0 W 2.0	2.0	M	Good	Good	20 - 40	Fruit tree of reasonable form	C

<sup>1</sup> 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

Tree constraints plan showing tree numbers, BS5837 colour codes (A – Green, B – Blue, C – Grey) and root protection areas (dashed circles)



**Andrew Dobson Architects**  
 Studio 316, Metal Box Factory,  
 30 Great Guildford Street, London, SE1 0HS  
 Tel: 020 7736 4390  
 Web: www.andewdobsonarchitects.co.uk  
 Email: info@andewdobsonarchitects.co.uk

Note:  
 1. The design and drawings remain the property of Andrew Dobson Architects Ltd. The client is licensed to use this design and documents on this site only; this license is non-transferable. The design and drawings shall not be reproduced, up-loaded to the internet or traced without the permission of Andrew Dobson Architects Ltd.  
 2. Do not scale off this drawing, check dimensions on site and advise any discrepancies before commencing work. © andrew dobson architects



Address:		3 Ranulf Road, London, NW2 2BT	
drawing title:		Site Plan - Existing	
drawing no.:		413-P0.002-C	
Scale:	I:100 @ A2	Status:	Planning
Drawn:	MK	Checked:	FN
Date:	08/01/21	Rev:	C

### APPENDIX MD3

BS5837: 2012 schedule of root protection areas

<b>Tree No.</b>	<b>Species</b>	<b>Trunk diameter (mm)</b>	<b>BS5837: 2012 Root protection area, RPA, (m<sup>2</sup>)</b>	<b>BS5837: 2012 Radial protection distance (m)</b>
T1	Pine	500	113.1	6.0
T2	Prunus	151	10.3	1.8
T3	Ash	500	113.1	6.0
T4	Cypress	300	40.7	3.6
T5	Cypress	250	28.3	3.0
T6	Holly	200	18.1	2.4
T7	Pear	170	13.1	2.0



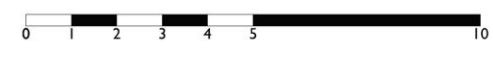
**APPENDIX MD4**

Tree protection plan showing extent of root protection areas (dashed circles) together with positions of protective fencing (purple lines) and ground protection (orange shading).



**Andrew Dobson Architects**  
 Studio 316, Metal Box Factory,  
 30 Great Guildford Street, London, SE1 0HS  
 Tel: 020 7736 4390  
 Web: www.andewdobsonarchitects.co.uk  
 Email: info@andrewdobsonarchitects.co.uk

**Note:**  
 1. The design and drawings remain the property of Andrew Dobson Architects Ltd. The client is licensed to use this design and documents on this site only. This license is non-transferable. The design and drawings shall not be reproduced, up-loaded to the internet or traced without the permission of Andrew Dobson Architects Ltd.  
 2. Do not scale off this drawing. Check dimensions on site and advise any discrepancies before commencing work. © andrew dobson architects



Address:		3 Ranulf Road, London, NW2 2BT	
drawing title:		Site Plan - Proposed	
drawing no.:		413-P0.102-C	
Scale:	1:100 @ A2	Status:	Planning
Drawn:	MK	Checked:	FN
Date:	08/01/21	Rev:	C

## APPENDIX MD5

# TREE AWARENESS – SITE INDUCTION SHEET

SITE NAME: 3 Ranulf Road, London, NW2 2BT

**Trees are an important part of this development and all trees noted on the Tree Protection Plan are protected by planning conditions and by virtue of being in a Conservation Area. Trees must not be damaged in any way, including indirectly through compaction/contamination of soil, so that they can fully integrate into the finished project and stay healthy well into the future. All persons working on this site have a responsibility to be aware of trees and to abide by tree protection procedures.**

### How can trees can be damaged?

*Above the ground* – contacts and impacts with branches and trunk (for example by machine operations: piling rigs, high-sided vehicles, crane use, fixings to trunk, unauthorised cutting back of branches). Make sure there is adequate clearance under the tree canopy and don't stray close to the trunk. Damage to bark allows infections to enter the tree.

*Below the ground* – roots spread out from the trunk horizontally at shallow depth and are therefore easily damaged. Vehicle and pedestrian movements and storage of materials on unprotected ground causes compaction, especially in wet weather, and must be avoided. Soil stripping during site clearance or landscaping is prohibited in root protection areas. The effects of root damage may take some time to become obvious, but can result in disfiguring dieback of leaves and branches, or even death.

### Tree protection procedures

Provided that the simple steps below are followed most tree protection is straightforward:

- Stay out of tree Construction Exclusion Zones (CEZs). These are the areas of ground surrounding retained trees that are protected by barriers and/or ground protection. If you need to go into a CEZ, you must first gain authorisation from the Site Manager.
- No construction activity of any description within CEZs, e.g. soil stripping, cement mixing, services installation, storage of materials etc.
- No fires within 20m of trunk of any retained tree.
- If authorised to work within a CEZ, for example, for installation of an above-ground no-dig driveway you must follow the procedures set out in the **Arboricultural Method Statement**.
- If damage occurs, you must inform the Site Manager who must, in turn, inform the project arboriculturist.

### Planning Authority enforcement action needs to be avoided:

- 'Breach of Conditions' notices can prevent a site from being signed-off.
- 'Temporary Stop Notices' halt site operations and result in associated high costs.
- Wilful damage/destruction of TPO/Conservation Area trees can result in company and/or individual prosecutions - fines can be anything up to £20,000 (County Court fines are unlimited). Remember that fines may apply to the person committing the offence as well as the site owner and main contractors!

I have received site induction in tree awareness and tree protection procedures

PRINT NAME

SIGN

DATE

## 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 matters concerning amenity trees and was 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 focussed on issues relating to tree diseases and interactions between trees and buildings.

In 1997 Martin started an arboricultural consultancy practice specialising in subsidence and tree root claims, planning and development, tree safety and disease diagnosis. He was 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. Notable recent cases he has been involved in include *Robbins v London Borough of Bexley* and *Khan v London Borough of Harrow* and *Kane*.

From 1995 to 2011 he was an examiner for the Professional Diploma in Arboriculture for the Royal Forestry Society/ABC Awards and he is currently an assessor for the Arboricultural Association Registered Consultant scheme. He has been a guest lecturer for the Middlesex University Countryside Management MSc course and for Portsmouth University. Together with Dr Giles Biddle he has devised and teaches introductory and advanced courses on trees and subsidence and co-presents seminars on trees and climate change with Professor Andy Moffat for the Arboricultural Association.

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 and is a Member by examination of the Expert Witness Institute.