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Arboricultural Survey, Impact Assessment & Method Statement (BS5837:2012)

Site

The Lodge
North End Avenue
London
NW3 7HP

Client

junya.ishigami+associates

Date of Report:

March 2022

Report Reference:

AIA/MF/037/22

Report Prepared by:

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1.0 Introduction

1.1 This report has been instructed by junya.ishigami+associates to survey, assess and provide an Arboricultural Impact Assessment and Method Statement for the trees sited within close proximity of proposed development works at The Lodge, North End Avenue, London, NW3 7HP.

1.2 A site visit was conducted on 2nd March 2022 to survey and assess the trees. The weather at the time of inspection was bright and cold with trees in full dormancy / late winter mode.

1.3 The tree survey, report and recommendations have been compiled for the 14 no. trees and 1 no. hedge (T1-T15) surveyed within the site and neighbouring sites where relevant.

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 tree describing size, condition and surroundings are found within this appendix.

1.5 The trees located within the site are shown in site plans T001-T003, Appendix B, and these correspond to the tree survey results table, Appendix A. Photographs of the trees can also be found in Appendix C.

1.6 This report and the opinions within it have been produced by Marcus Foster, a qualified arboriculturist and Professional Member of the Arboricultural Association with over 20 years experience and holding a National Diploma in Arboriculture, the Arboricultural Association's Technicians Certificate, Professional Tree Inspection Certificate (LANTRA) 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. As a consultant many of projects undertaken are in the inner London Boroughs of Islington, Hackney, Westminster, Camden, Southwark and RBKC, making Marcus Foster familiar with the most recent requirements of development and constraints on urban trees.

1.7 No additional documentation unrelated to the property or development has been referred to for the trees or the property for the compilation of this report.

2.0 Survey Details and Scope

2.1 The site survey included the 14 no. trees and 1 no. hedge (T1-T15) as shown in the survey, *Appendix A*, and also highlighted on the site plans, *Appendix B*.

2.2 The trees and hedges were surveyed from ground level from within their site location. The diameter of the trunks have been measured using a DBH tape at 1.5m height. The height of the trees have been estimated.

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)
- Structural Condition: G (good); F (fair); P (poor); D (dead)
- General Condition Specific comments relating to each tree
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance m2 Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012)

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

2.5 Findings as shown within *Appendix A* and assessed within *Section 5* are also highlighted within *Appendix B* which incorporates the Tree Constraints Plan (TCP) - drawing T002 addressing areas where arboricultural solutions are required. The Tree Protection Plan (TPP) - drawing T003 provides outline tree protection measures.

3.0 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. 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.

3.3 The survey has been undertaken as a survey of the trees without prior influence of the development and implicating factors.

3.4 No invasive tools were used during this site survey.

3.5 It should be noted that vegetation including shrubs within this / the neighbouring sites have not been included in the survey as none were within close or relevant proximity .

3.6 The survey has been undertaken from within the site only.

4.0 Tree Survey Summary

4.1 The trees have been surveyed 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 / survey.

T1

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.

T1, T2, T3, T5, T7, T8, T9, T13, T14, T15

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.

T4, T6, T10, H11, T12

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.

N/A

4.2 The trees have been surveyed taking into account condition, general health and form without the development process influencing the survey. In addition they have also been surveyed taking account of amenity value that is offered in relation to both the landscape and surrounding buildings and streetscape. This report outlines the impact that the proposed development will have on the overall treescape and landscape; it provides recommendations to ensure that long-term amenity value for the area is retained.

4.3 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. The Arboricultural Impact Assessment including Tree Constraints Plan (TCP) highlights areas where the trees will require protection which should be addressed within the Arboricultural Method Statement (AMS) and/or Tree Protection Plan (TPP) specific to the site and proposed scheme, and corroborating with all construction and landscape method statements as relevant.

4.4 The report specifies precautions which shall be taken when working close to retained trees. Important terms include:

Root Protection Area (RPA)
The area defined as requiring protection from development from retained trees within BS5837 (2012). Using a calculation provided within BS5837 a radius distance is provided based on a measurement of the main stem taken at 1.5m height.

Construction Exclusion Zone (CEZ)
This is the RPA where no construction activity should occur and damage is prevented by either installing fencing to restrict access or installing ground protection that allows limited access above the ground, while protecting the rooting environment below.

Due to site constraints and the encroaching nature of development for an area within the RPA outside the CEZ where works are proposed, works must be carried out with care to minimise any impact on the tree rooting environment.

Tree Protection Plan (TPP)
The document which defines the extent and methodology of tree protection for the entire development process. This should be referred to AT ALL TIMES by the principal contractor and shall ensure safe protection of all retained trees on site.

5.0 Arboricultural Impact Assessment

Site Overview

5.1 The 14 no. trees and 1 no. hedge (T1-T15) located within close proximity of the proposed development works are sited within the rear of the property.

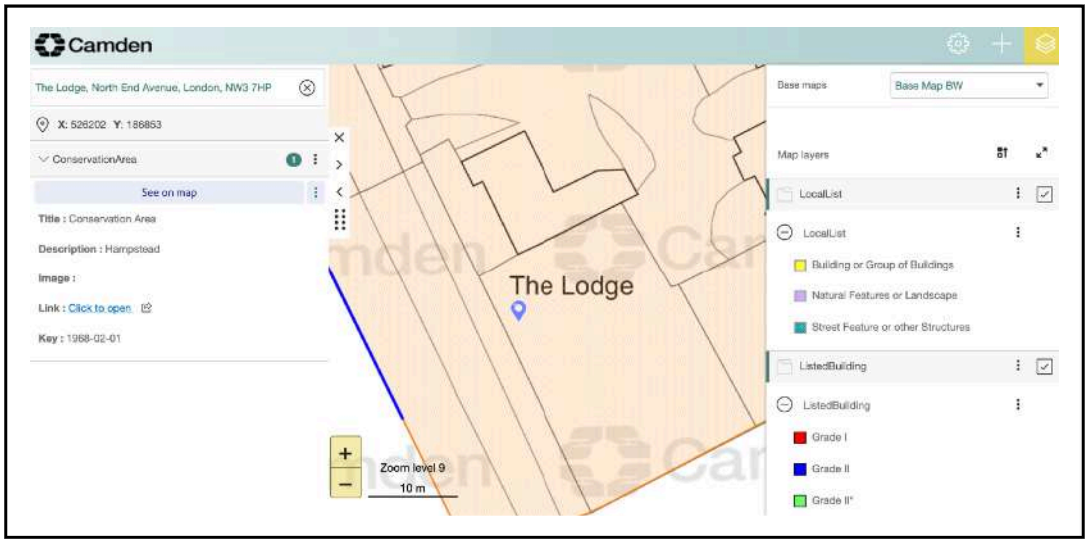
5.2 The following statutory checks have been made in relation to the tree and its status within London Borough of Camden (LBC).

CONSERVATION AREA STATUS
Hampstead Conservation Area

TREE PRESERVATION ORDER (TPO) STATUS

TPO protection check has not been undertaken. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order , and those trees without. This is principally because a detailed planning consent overrides any TPO protection

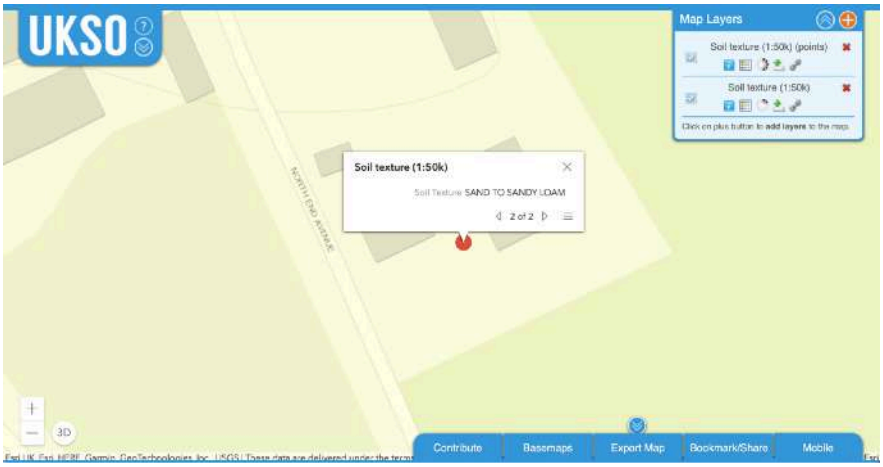
5.3 The following map confirms the location of the trees / property as extracted from interactive maps:



Extract from:
https://ssa.camden.gov.uk/connect/analyst/mobile/#/main?mapcfg=CamdenConservation&lang=en-gb

5.4 The underlying soil to this area is classified as 'sand to sandy loam' within the UK Soil Observatory - www.ukso.org - a light to medium soil mix as confirmed below. The absence of a clay element within the soil is significant in terms of both tree protection and foundation design. Whilst clay soils can experience substantial volume changes when vegetation extracts moisture from the ground, other soils are not as susceptible; the soil is deemed as being of light to medium texture. Any foundations should also be designed in

accordance with the recommendations contained within NHBC Chapter 4.2 (National House Building Council, 2010) and should account for the possibility of both subsidence and heave.



Extract from:www.ukso.org

5.5 The site comprises a residential property with soft and hard landscape features associated with the rear garden subject to development proposal. The site is shown below as viewed from aerial imagery:

Extract from: GoogleMaps

For the purposes of this report, reference has been made to the following plans for the proposal:

junya.ishigami+associates
DWG References:
220207_lhh_GA_final_v2019 2
220219_lhh_set_drawing A09
220219_lhh_set_drawing A03

5.6 The proposed development comprises:

(i) Construction of garden building
(ii) Exterior hard & soft landscape works

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

- Retention of all trees located within and neighbouring the site

- Potential impact to the root plate of retained trees during development process from construction works, specifically relation to the implementation of helical screw piles to form foundations

- General development process impacting the tree's root plates

- The use of and storage of materials and chemicals including concrete on site within close proximity of the trees has the potential to cause damage

- The long-term impact of associated works of the proposed development

5.8 The trees and the impact from the proposed development are evaluated within this section to determine overall arboricultural impact from the proposed development. Where trees are retained the Root Protection Area (RPA) for each tree is evaluated in relation to proposed development works and the following is assessed:

(i) Where tree protection measures are deemed appropriate these are highlighted as being required

(ii) Tree protection measures are outlined within the Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP)

Arboricultural Impact Assessment

Overview of Tree Survey

5.9 The species mix of trees surveyed comprises as follows:

The Lodge, North End Avenue
Yew (*Taxus baccata*)
Western red cedar (*Thuja plicata*)
Silver birch (*Betula pendula*)
Lawson cypress (Cupressus x lawsoniana)
Ash (*Fraxinus excelsior*)

Public highway / Corporation of London land
Horse chestnut (*Aesculus hippocastanum*)
Common Lime (*Tilia europea*)

Northstead, North End Avenue
Leyland cypress (Cupressus x leylandii)

Trees T1 - T3

5.10 Trees T1-T2 comprise 2 no. mature Common lime trees within the neighbouring pathway land. The trees have a lapsed management history being sited to the west of the site within raised topography. The trees have the following incursions within the footprint of the garden building:

Tree T1 - 5% incursion to RPA
Tree T2 - 7% incursion to RPA

5.11 The development proposal is deemed achievable whilst protecting the tree roots and canopy for the following factors:

(i) Helical screw pile with minimal ground disturbance with all associated excavations undertaken by hand in accordance with specifications set out within the AMS under arboricultural supervision.

(ii) No further ground works or excavations for structure with building structure suspended above ground level

(iii) No grading of existing topography for works including minor landscape works only associated with raised structure

(iv) Main stem and majority of root plates protected by virtue of off site location

5.12 Tree protection measures required to retain the trees without detrimental impact to the health and / or structural engineering methodology include as follows:

(i) TREE PROTECTION FENCING
Tree protection fencing applied as per AMS & TPP

(ii) PRECAUTIONARY AREA WORKS
Inclusion of a 'Precautionary Area' which defines a specific area of the proposed development where all works shall be carried out in accordance with tree protection measures as outlined within the AMS

(iii) GROUND PROTECTION
Ground protection for RPA area exposed to construction works shall be implemented as shown within the AMS & TPP where not existing hard standing

5.13 Additionally the off site highway Horse chestnut tree T3 has been surveyed due to close proximity to development entrance. Due to the relative light nature of works no tree protection measures are applicable in relation to this tree.

Trees T4 - T10

5.14 Trees T4-T10 comprise semi-mature to mature trees surrounding the front of the property. The trees shall remain unaffected by proposed development works by virtue of the following reasons:

(i) Front of property with existing hard landscapes established to enable delivery and site infrastructure for limited development works

(ii) Trees generally managed with low canopies lifted

(iii) No incursion of RPA's to development by virtue of front of property location

5.15 Therefore the following tree protection measures are applicable to ensure protection of the front of property trees during development process:

(i) SITE INFRASTRUCTURE / STORAGE / WELFARE
All elements of development site infrastructure to be retained on existing hard landscapes

Hedge H11

5.16 Hedge H11 off site to the east within Northstead, North End Avenue is a young to semi-mature Leyland Cypress with developing screening form. The hedge shall remain unaffected by development works.

Trees T12 - T15

5.17 Trees T12-T15 comprise 3 no. mature Western red cedar trees and 1 no. Silver birch tree sited on the southern raised embankment. In relation to site location and trees the following is noted in relation to development proposal:

- Trees within existing raised retainer to south of development footprint for garden building - raised by approximately 1800mm height
- Raised topography and siting of trees on upper embankment with level root plate to south shall have encouraged majority of root plate to south and west in relation to prevailing weather systems and favourable rooting environment in this direction
- Canopies raised above main garden level / site of proposed garden building by virtue of minor crown lifting and trees raised above the garden level

5.18 The trees have the following incursions within the proposed footprint of the garden building:

Tree T12 - 17% incursion to RPA
Tree T13 - 11% incursion to RPA
Tree T14 - 19% incursion to RPA
Tree T15 - 27% incursion to RPA

5.19 The development proposal is deemed achievable whilst protecting the tree roots and canopy for the following factors:

(i) Helical screw pile with minimal ground disturbance with all associated excavations undertaken by hand in accordance with specifications set out within the AMS under arboricultural supervision.

(ii) No further ground works or excavations for structure with main element of building structure suspended above ground level

(iii) No grading of existing topography for works including minor landscape works only associated with raised structure

(iv) Main stem and majority of root plates protected by virtue of upper embankment location

(v) Canopies unaffected by proposal by virtue of crown lifted form

5.20 The proposed structure within the garden shall be constructed and supported on helical screw piles only. As set out within drawing reference: *220219_lhh_set_drawing A03.* The proposed screw piles shall be set within the RPA with quantity and locations to be confirmed within final structural engineering drawings.

Extract from DWG 220219_lhh_set_drawing A03

5.21 The use of a helical screw pile structural engineering methodology allows for the following within a RPA:

- Excavations within area of piles only as proof digs to ensure no major root severance
- Minimal and selective excavations
- Loading of structure above RPA
- Limited use of concrete and chemicals

The methodology of implementation of screw piles within the RPA of retained trees to enable tree protection is shown below:

5.22 Additionally it is noted that the impact upon the crown of the trees is limited as the structure is not proposed not for residential occupation with shading / future occupancy not requiring consideration

5.23 Tree protection measures required to retain the trees without detrimental impact to the health and / or structural engineering methodology include as follows:

(i) TREE PROTECTION FENCING
Tree protection fencing shall be applied as per AMS & TPP

(ii) PRECAUTIONARY AREA WORKS
Inclusion of a 'Precautionary Area' which defines a specific area of the proposed development where all works shall be carried out in accordance with tree protection measures as outlined within the AMS

(iii) GROUND PROTECTION
Ground protection for RPA area exposed to construction works shall be implemented as shown within the AMS & TPP where not existing hard standing

Summary of Arboricultural Impact

5.24 The proposed development requires tree protection measures for the implementation of development as follows:

Tree Protection applicable to the following trees:
T1, T2, T12, T13, T14, T15

5.25 The arboricultural impact upon trees retained is limited. As outlined within drawing T002 - Tree Constraints Plan (TCP) require the following tree protection measures as outlined within drawing T003 - Tree Protection Plan (TPP):

(i) TREE PROTECTION FENCING
(ii) GROUND PROTECTION
(iii) PRECAUTIONARY AREA

5.26 There is no loss of trees associated with the development and the root plate and canopy cover of the trees shall be protected for the duration of the development and for the long term with tree protection measures applied as specified within the AMS and Scheme of Arboricultural Supervision.

6.0 Arboricultural Method Statement

6.1 The following tree protection measures require full adherence AT ALL TIMES with full supervision from the consulting arboriculturist as outlined within this report. The measures are outlined within Tree Protection Plan (TPP) - drawing T003.

6.1 **Tree Works**

6.1.1 No tree works are required as confirmed within the Tree Works Schedule - *Section 7*.

6.2 **Tree Protection Fencing**

6.2.1 Protection of the trees highlighted for retention must be implemented as explained below and as specified within the TPP - drawing T003.

6.2.2 These measures must remain for the entire construction process in order to provide a comprehensive barrier from the trees

- The areas surrounding the trees must be surrounded by protective fencing as outlined in TPP - drawing T003
- The protective fencing used must be suitable for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees.
- This barrier must remain rigid and complete during the entire construction process
- Once the Exclusion Zones have been protected by fencing all weather notices as included in *Appendix D* must be put onto the barrier warning that the area is a construction exclusion zone
- No building materials or chemicals are stored within the tree protection zone as indicated on the TPP

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

6.3 **Ground Protection**

6.3.1 For ground protection the use of ground protection boards shall be applied for any ground exposed to construction site activities.

6.3.3 The following ground protection, or similar product with representative specification for load bearing capacity, must be used AT ALL TIMES as follows,:

TuffTrak Ground Protection Solutions
MD1 EUROMAT https://tufftrak-safety.com/products/medium-duty-ground-protection/euromat/

6.4 **Storage of Construction site related materials, plant and spoil**

6.4.1 A designated storage area must be confirmed at pre-commencement stage which is located outside of the RPA of retained trees. Strict adherence to this area must be made to this area at all times.

6.4.2 The location shall be confirmed within the pre-commencement report submitted to LBC tree officer within the Arboricultural Scheme of Supervision.

6.5 **Site Welfare & Site Office**

6.5.1 Site welfare must be confirmed at pre-commencement stage and must be outside of the RPA of retained trees - no provision within the TPP is therefore required in relation to trees.

6.5.2 The location shall be confirmed within the pre-commencement report submitted to LBC tree officer within the scheme of supervision.

6.6 **Fires**

6.6.1 There must UNDER NO CIRCUMSTANCES be fires within this site.

6.7 **Communication, Monitoring and Compliance**

6.7.1 In ensuring that all Tree Protections Specifications as highlighted within this AMS are closely adhered to at all times, it is important to set out for the long term of the development, communication details for key individuals and tasks that require monitoring.

6.7.1 The Scheme of Arboricultural Supervision must be applied from pre-commencement - refer to *Section 7*.

6.8 **Precautionary Area Works**

6.8.1 For the precautionary areas / RPA of retained trees in relation to proposed structure for trees T1, T2 & T12, T13, T14, T15 the structural methodology with tree protection measures shall be used with full specifications and structural engineering details to be confirmed at pre-commencement stage.

6.8.2 For the precautionary areas within RPA of retained trees in relation to proposed structure and helical screw pile foundations for retained trees and

RPA's the following structural methodology with tree protection measures shall be applied:

6.8.3 The foundation design shall be a helical screw pile system with exact specification and contractor confirmed within the pre-commencement report.

GROUND WORKS SEQUENCE

PRECAUTIONARY WORKS AREA IDENTIFIED
A Precautionary area is an area where tree protection for excavations and Helical screw pile works require implementation within RPA of retained trees.

↓

All works within precautionary area highlighted within 'Toolbox Talk'

↓

Initial hand dug locations of proposed helical screw pile locations to be undertaken with full arboricultural supervision to ensure no severance of major roots.

↓

The exact location of each pile location and evidence of no tree root damage must then be submitted within supervision report by the consulting arboriculturist

6.8.4 For the precautionary area / proposed structural works within RPA of retained trees the ground works must adhere to the following tree protection methodology:

> For undertaking excavations within the 'Precautionary Area' guidance below must be adhered to;
>
> *Excavation and dealing with roots*
> BS5837 (2012) makes provision for undertaking excavations in RPAs, explaining that all excavation must be carried out carefully using spades, forks and trowels, It is important not to damage the bark and wood of any roots. For this area, these tools should be used with no machinery used for the preliminary works. All excavations to be hand dug excavations only to ensure no severance of major roots

Tree Root Severance Guidance
The contractors must be aware of tree protection specifications n relation to tree roots which must be applied as follows:

- The severance of any tree roots encountered larger than 25mm in diameter MUST NOT occur without prior consultation with the Local Authority Tree Officer or appointed Arboricultural Consultant.

- Any exposed ground within the RPA must be covered in hessian and kept damp where left exposed during works

- If at any point it is deemed not possible to continue with works without having to damage very significant tree roots, the Local Authority

- Tree Officer and / or the appointed Arboricultural Consultant must be contacted.

6.8.5 The works shall be undertaken using hand tools only such as this included below or similar for 'Precautionary Area' as highlighted within the TPP:

6.9 **Final Hard & Soft Landscape Works**

6.9.1 For final landscaping works the following must apply where carried out within the RPA of retained trees

- No reduction in levels of the underlying soil surface will occur during final landscaping works within the RPA of retained trees

- Close adherence with detailed root protections specifications as outlined within this report

- No compaction of soils for establishing level base beyond previous existing sub base

6.9.2 No soakaway shall be sited within the RPA of retained trees and all rainwater discharge from the garden building shall be directed beneath the garden building.

6.10 **Installation of utility services**

6.10.1 The installation and/or amendment of utility services within the RPA of retained trees must be above ground level. Where any amendment to this proposal is required the consulting arboriculturist and Local Authority must be notified prior to any ground tree protection / fencing and barrier removal and the following details adhered to:

- Trenching for the installation of underground services severs any tree roots present and can have a detrimental impact on the structural integrity of affected trees. When services are required to pass through a Tree Protection Area / CEZ, detailed plans showing proposed routes should be drawn up in conjunction with the consulting arboriculturist to avoid long term problems for related trees.

- The preferable method for trenching is to use a 'Air Spade' or similar to remove soil with compressed air, therefore minimising damage to roots in the process. Should hand dug excavations be required within the RPA this shall only be undertaken with arboricultural supervision.

6.10.2 Further reference can be made to National Joint Utilities Group (Volume 4, Issue 2) for guidance but any approach must be approved by both the consulting arboriculturist and Local Authority tree officer - WCC.

7.0 Communication, Monitoring and Compliance

7.1 In ensuring that all Tree Protections Specifications as highlighted within this method statement are fully adhered to at all times, it is important to set out for the long term of the development, communication details for key individuals and tasks that require monitoring.

7.2 An Arboricultural Scheme of Supervision shall be confirmed in writing at pre-commencement stage and approved by LBC.

7.3 For all tree protection measures these must be considered as sacrosanct and should not be removed or altered without prior written consent from the Local Authority tree officer and/or consulting arboriculturist.

7.4 The local authority arboriculturist will have free access to the site and forward any concerns / recommendations directly to the consulting arboriculturist.

7.5 The following individuals and organisations are central to the delivery of the scheme in relation to the tree protection measures it requires:

CONSULTING ARBORICULTURIST
Name - Marcus Foster MArborA
Telephone - 07812024070
Contact - Marcus Foster
Email - mail@marcus-foster.com

LONDON BOROUGH of CAMDEN - TREE OFFICER
Name - Arboricultural Services - London Borough of Camden
Telephone - 020 7974 5939
Contact - Nick Bell - Tree Officer
Email - nick.bell@camden.gov.uk

8.0 Tree Works Schedule

8.1 All tree work must be carried out to BS 3998; 2010 Recommendations for Tree Work.

8.2 Should works be required an application for TPO Tree Works or Section 211 Notification of Tree Works in Conservation Area must be made prior to the works being undertaken.

TREE WORKS SCHEDULE
The Lodge, North End Avenue, London, NW3 7HP

Tree No.	Common Name	Category Rating	Tree Works	Reason for works
No action required at present				

NOTE: Wildlife & Habitat Protection Guidelines
The tree work specifications included within this report do not provide an exemption from the requirements to comply with the Wildlife and Countryside Act 1981, the Habitats Regulations 1994 and the Countryside and Rights of Way Act 2000, or any acts offering protection to wildlife. Of particular note is the protection offered to bats, birds and their nests, whilst being built or in use. It must be noted that failure to comply with the Acts may result in a criminal prosecution.

Appendices
Appendix A

Tree Survey Schedule
(BS5837:2012)

The Lodge
North End Avenue
London
NW3 7HP

Colour Key: BS5837: 2012 (see Section 2.6)

Three Survey Key: BS5837: 2012

- 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)
- Structural Condition: G (good); F (fair); P (poor); D (dead)
- General Condition Specific comments relating to each tree
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance m2 Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012)

BS5837:2012 TREE SURVEY
The Lodge, North End Avenue, London, NW3 7HP
BS5837 Tree Schedule (BS5837:2012) - 03.03.22

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T1	Lime	20	800 (estimate)	4 6 5 5	SM	F	G	C1	10 years +	Off site to west. Main union at 5m height. Historically pollarded at 13-15m height - lapsed 10-15 years. Major deadwood	289.57	9.6
T2	Lime	20	800 (estimate)	5 5 3 5	SM	F	G	B2	20 years +	Off site to west, Crown lifted with open wounds from crown lifting. Historically pollarded at 13-15m height - lapsed 10-15 years. Major deadwood	289.57	9.6
T3	Horse chestnut	16	680	5 7 5 7	M	F	G	B2	20 years +	Off site highway tree (Corporation of London). Low growth developing over highway to 3m height. Major deadwood	209.21	8.2
T4	Lawsons cypress	14	570	2 2 2 2	EM	F	F	C1	10 years +	Sited within raised retainer. Initial sweep to east. Crown growing on gutter line / roof	147.0	6.8
T5	Silver birch	15	540	3 8 5 4	M	F	G	B1	20 years +	Off site. Ivy clad at base; obscuring full inspection. Union at 3m height with eastern leader extending over property. Ivy clad to 9m height	131.93	6.5
T6	Silver birch	11	200	2 1 1 1	EM	P	P	C1	10 years +	Off site.Excessively ivy clad to 9m height. Limited crown	18.1	2.4
T7	Yew	13	T/s 220 480	4 4 4 3	SM	F	F	B2	20 years +	Sited within raised retainer. Crown lifted to 4m height. Low growth developing to 3m height. Major deadwood	104.24	4.8
T8	Ash	15	450	4 7 7 5	SM	F	F	B1	20 years +	Off site. Lean to east. Crown lifted 5m. Low growth developing to 3m height with major deadwood	91.62	5.4
T9	Yew	9	500	4 4 3 4	EM	G	G	B1	20 years +	Compact specimen with multi-stem habit from 0.5m. low growth over building to west	113.11	6.0

BS5837:2012 TREE SURVEY
The Lodge, North End Avenue, London, NW3 7HP
BS5837 Tree Schedule (BS5837:2012) - 03.03.22

Tree No	Species	Height (m)	DBH (mm)	Spread (m) N/E/S/W	Age	Structural Condition	Vitality	BS5837 (2012) Rating	Remaining Contribution (years)	Comments / Structural Condition	Root Protection Area (RPA) m2	Root Protection Area (RPA) Radius (m)
T10	Lawsons cypress	12	350	3 3 3 3	EM	F	F	C1	10 years +	Straight bole; previously topped at 8-10m height with regenerated upper crown - declining vigour	55.42	4.2
H11	Leyland Cypress	5	M/s 150	5 1 5 1	SM	F	F	C2	10 years +	Off site hedge, young with low growth developing over site	7.07	1.5
T12	Silver birch	14	440	3 3 1 2	EM	F	F	C1	10 years +	Lean to north from upper level of steeply sloping embankment. Bifurcation at 2.5m height Northern stem storm damaged at 8m height - unbalanced form	87.59	5.3
T13	Western red cedar	17	580	2 3 2 2	EM	F	G	B2	20 years +	Growing from upper level of steeply sloping embankment. Columnar screening form, growing within grouping. Lean to east	152.2	7.0
T14	Western red cedar	16	490	2 2 2 2	EM	F	G	B2	20 years +	Growing from upper level of steeply sloping embankment. Columnar screening form, growing within grouping. Lean to east	108.63	5.9
T15	Western red cedar	17	600	4 3 2 3	EM	F	G	B2	20 years +	Growing from upper level of steeply sloping embankment. Columnar screening form, growing within grouping. Lean to north west. Animal burrowing at base to north	162.88	7.2

Appendix B

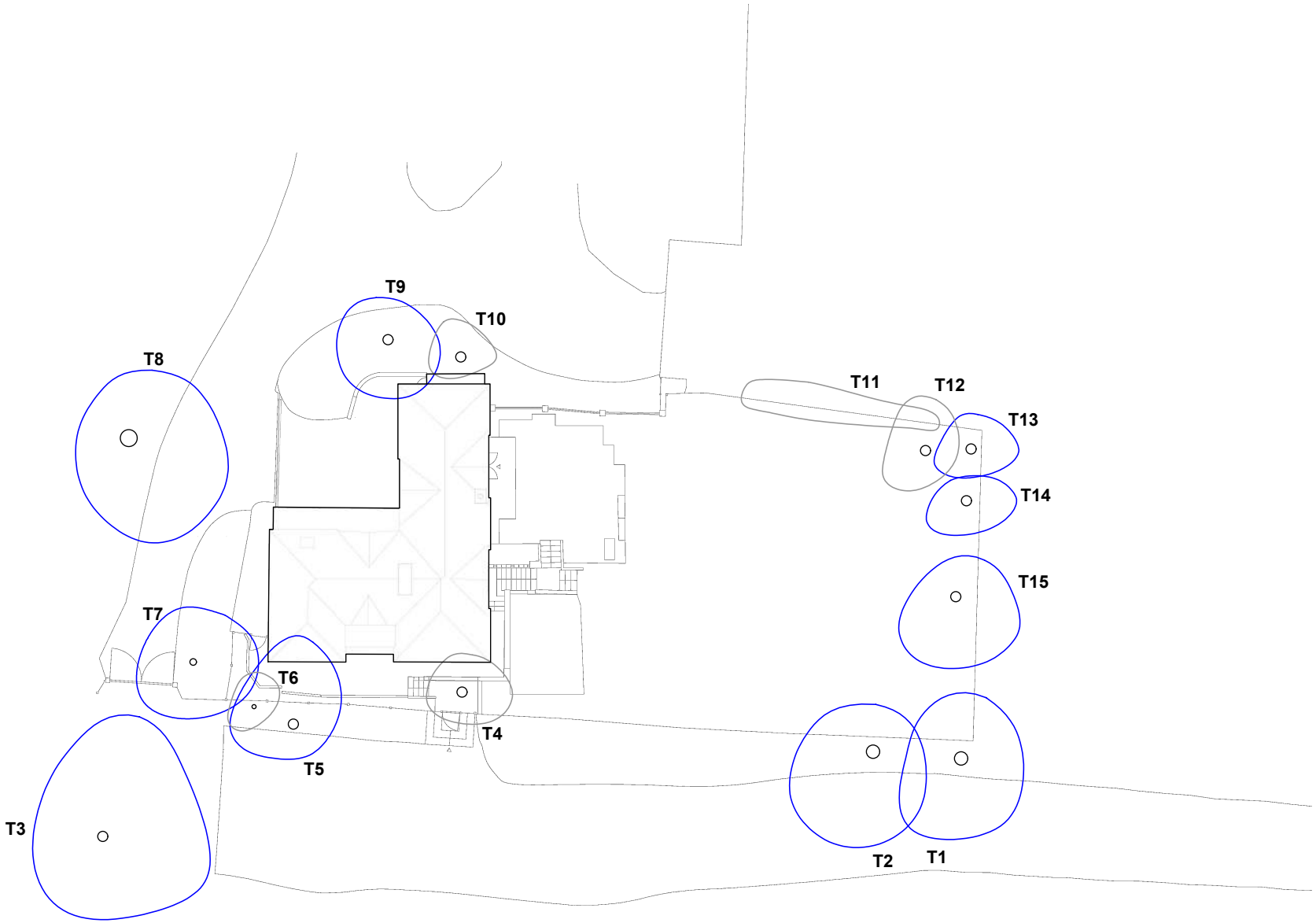
Tree Survey Plans
BS5837:2012

Existing Tree Survey (T001)
Tree Constraints Plan (T002)
Tree Protection Plan (T003)

The Lodge
North End Avenue
London
NW3 7HP

Colour Key: BS5837: 2012 (see Section 2.6)

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



KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	SHADING ARC

BS5837 (2012) Tree Survey Notes

1. In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white

2. If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.

3. This drawing should be read in conjunction with all other relevant drawings and specifications

4. Marcus Foster Arboricultural Design & Consultancy accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided

5. Off site trees have been plotted based on site visit survey and locations are not based upon topographiccal survey

NOTE: Tree survey locations based on previous undertaken topographical surveys for design issue and additional GIS mapping has not been undertaken for the purposes of this survey

0 5 10 15 20m

Revisions

Rev.	Date		Checked
/	11.03.2022	ISSUED FOR INFORMATION	MF

JOB TITLE: The Lodge, North End Avenue, London, NW3
CLIENT: junya.ishigami+associates
DWG TITLE: Existing Tree Survey Plan
SCALE: 1:250 @ A3
DATE: MAR 2022
JOB NO: AIA/MF/037/22
DWG NO.: T001

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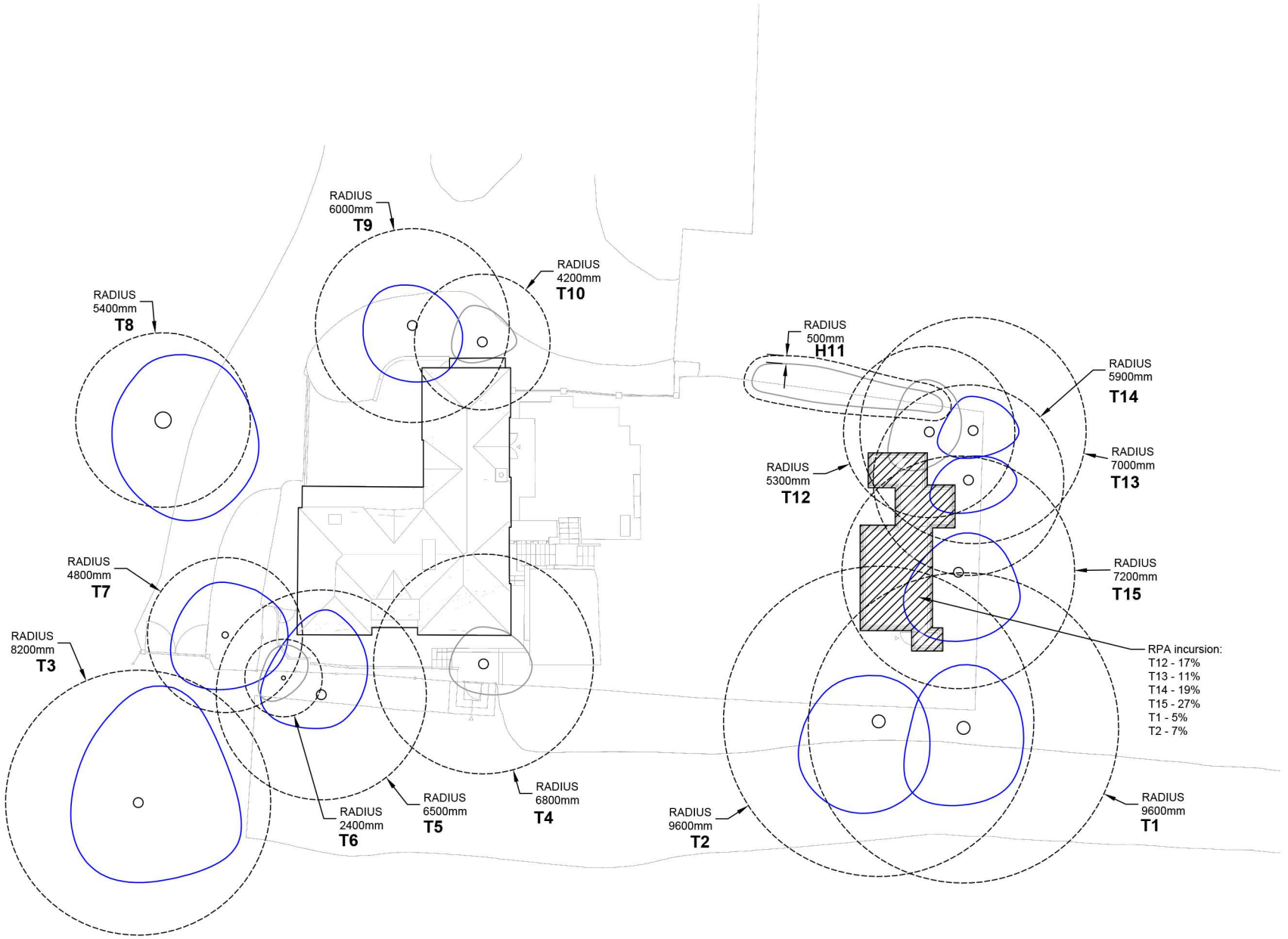
Marcus Foster
TREE CONSULTANCY



KEY

CATEGORY A
CATEGORY B
CATEGORY C
CATEGORY U
TREES REMOVED
RPA
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Revisions

Rev.	Date		Checked
/	11.03.2022	ISSUED FOR INFORMATION	MF

JOB TITLE	The Lodge, North End Avenue, London, NW3
CLIENT	junya.ishigami+associates
DWG TITLE	Tree Constraints Plan
SCALE	1:250 @ A3
DATE	MAR 2022
JOB NO	AIA/MF/037/22
DWG NO.	T002

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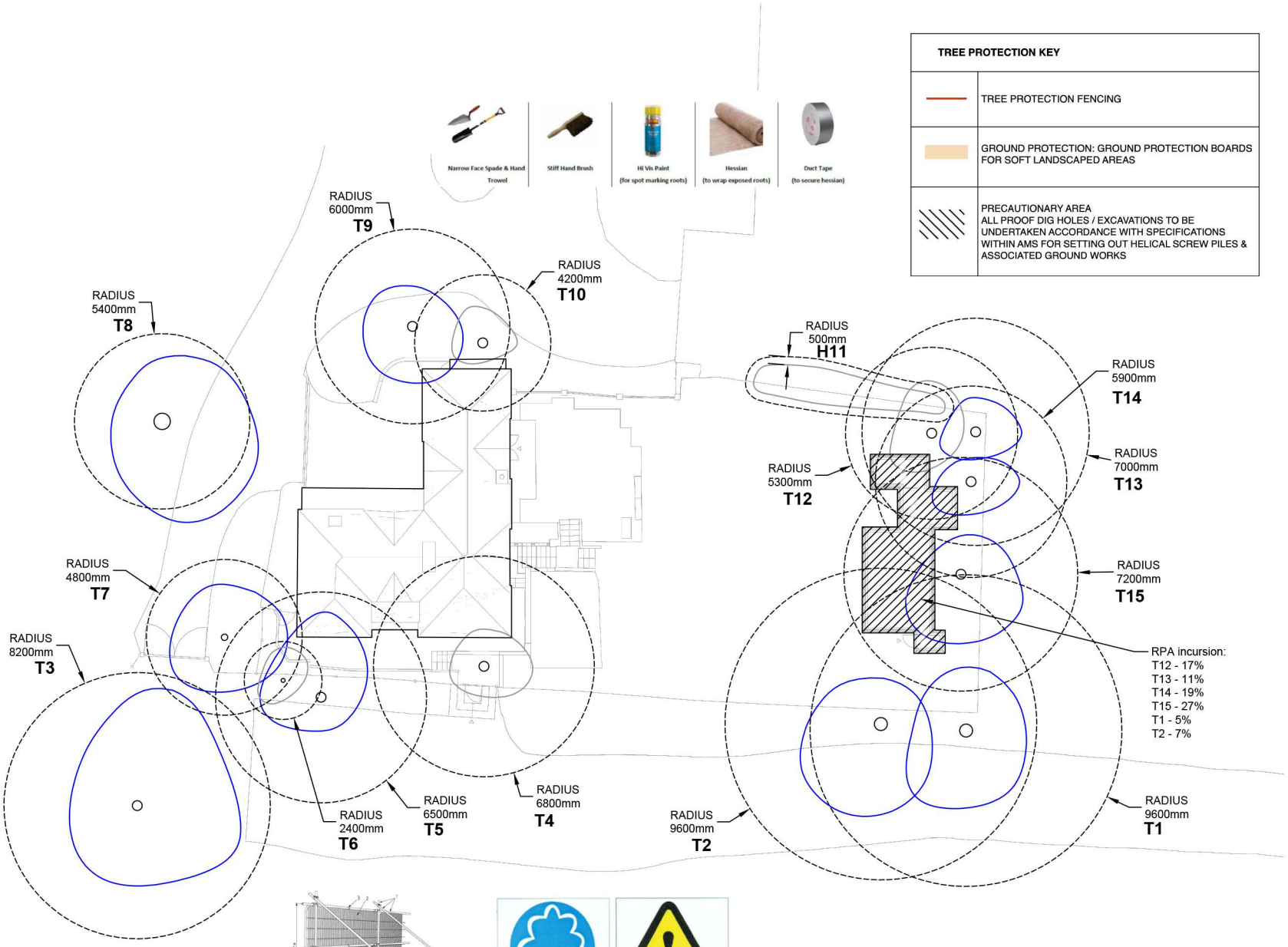
Marcus Foster
TREE CONSULTANCY



TREE PROTECTION KEY	
	TREE PROTECTION FENCING
	GROUND PROTECTION: GROUND PROTECTION BOARDS FOR SOFT LANDSCAPED AREAS
	PRECAUTIONARY AREA ALL PROOF DIG HOLES / EXCAVATIONS TO BE UNDERTAKEN ACCORDANCE WITH SPECIFICATIONS WITHIN AMS FOR SETTING OUT HELICAL SCREW PILES & ASSOCIATED GROUND WORKS

KEY

	CATEGORY A
	CATEGORY B
	CATEGORY C
	CATEGORY U
	TREES REMOVED
	RPA
	RPA INCURSION
	SHADING ARC

BS5837 (2012) Tree Survey Notes

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DWG NO.	T002

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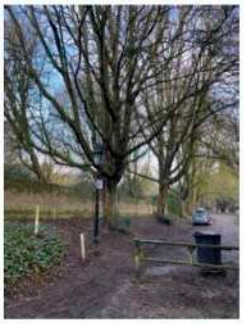
TREE CONSULTANCY

Appendix C:
Site Photographs

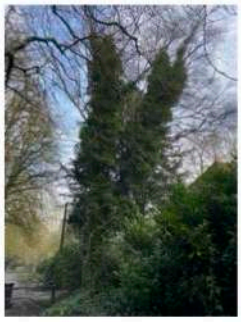
The Lodge
North End Avenue
London
NW3 7HP

Taken by M Foster (March 2022)

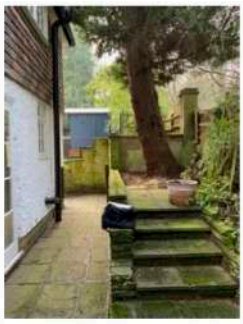
Trees T1-T2 & T13-T15 as viewed in a southerly direction



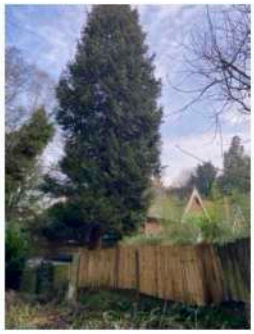
Tree T3 within highway to west of site and highway



Trees T5 & T6 off site to west as viewed to south from public footpath

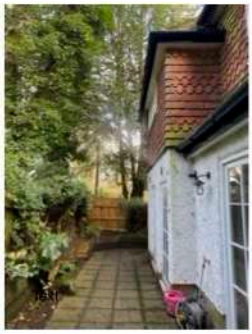


Tree T4 as viewed to south within raised retainer

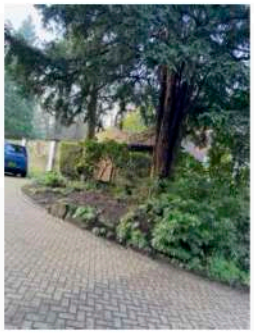


Tree T4 as viewed to north east within raised retainer

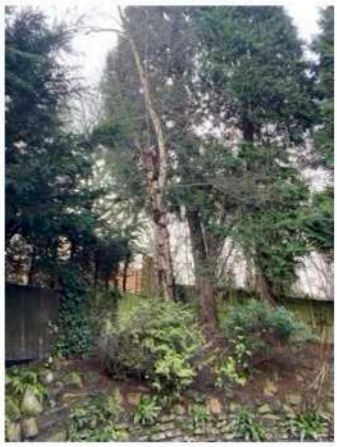
Trees T5-T7 at front of property viewed to west



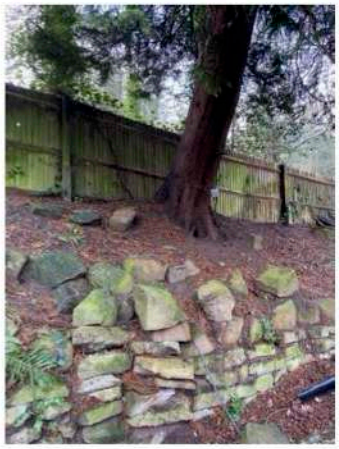
Trees T5-T7 at front of property viewed to north



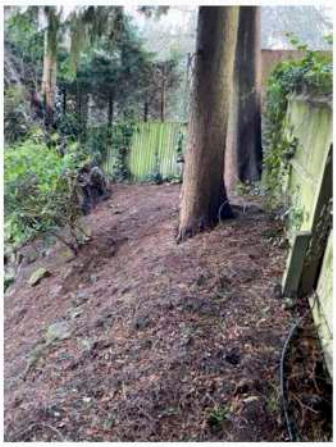
Trees T9 & T10 as viewed to south



Hedge H11 to east and T12-T13 viewed to the south east



Base and initial main stem of T15 within raised embankment viewed to the south



Base and initial main stem of T13-T14 within raised embankment viewed to the south

Base and initial main stem of T15 within raised embankment viewed to the west

Base and initial main stem of T13-T15 within raised embankment viewed to the east

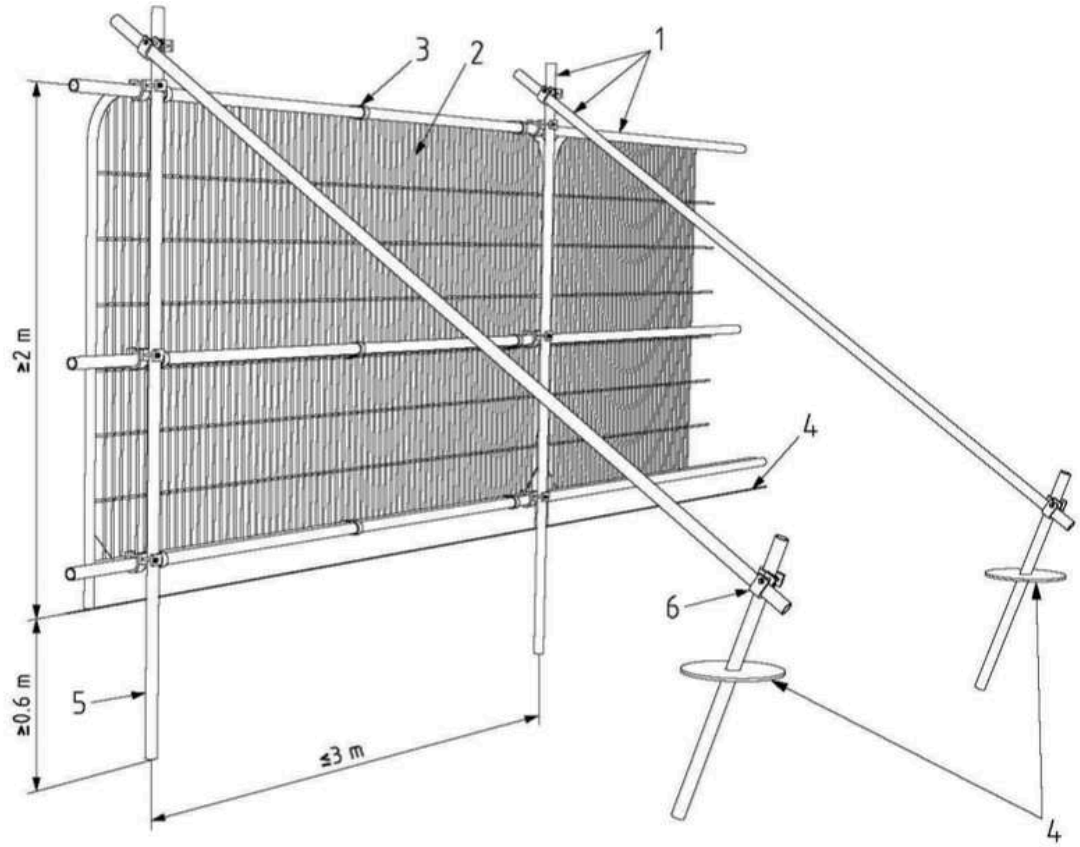
Appendix D:
Tree Protection Notice

Generic Tree Protection Notice
(BS5837: 2012):

Notice to be clearly shown on site where fencing constructed
AT ALL TIMES

Appendix E
Tree Protection Fencing Specifications

BS5837:2012 Figure2 Specification



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Appendix F: References

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

2. BS3998: Tree Work - Recommendations (British Standards Institute 2010)

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

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

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

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

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

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END OF REPORT _ Page 35/35