Arboricultural Planning and Method Statement
22 Heath Drive, Hampstead, London, NW3 7SB

Date: October 2019

Submitted to:

Atlantic Contracts
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Appendices

Quality Assurance

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Disclaimer

Version History

VERSION	DATE	AMENDMENT
A	OCTOBER 2019	INITIAL REPORT

1 Executive Summary

Atlantic Contracts are proposing alterations to both the front and rear gardens of a residential dwelling. The site address is 22 Heath Drive, Hampstead, London, NW3 7SB. The full application proposals detail excavations to the front of the property to create a larger driveway and construction of a boundary wall with metal fencing above and to the rear a new outbuilding and patio/seating area. For the purposes of this report, reference to 'the site' means land shown outlined in red on the Tree Constraints Plan contained in **Appendix 2**.

In line with the requirements of 'BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations' (BS5837:2012), Walsingham Planning have commissioned ADAS to provide arboricultural advice in relation to the proposed development. An ADAS Arboricultural Consultant carried out a full arboricultural survey of the site on Tuesday 13th August 2019 and as a result of that survey they have provided on-going advice in order to guide the proposed development layout.

The tree survey identified a total of three individual trees, one tree group and one hedgerow which have the potential to be impacted by the development proposals. In line with the recommendations contained within Table 1 of BS5837:2012 which is contained in **Appendix 8**, of these tree features, six were awarded a low C grade and two were awarded a moderate B grade. None were awarded a high A grade or a very low U grade.

Of the five tree features on site at the time of the survey, only one hedgerow (H1) will require removal in order to facilitate the proposals. It is salient to note that the landscape documents associated with this planning application detail the replacement of this hedgerow with Portuguese Laurel and so it is not anticipated that there will be any loss of amenity value during the medium term.

Using Camden Council's online GIS tool, it was confirmed on the 17th October 2019 that the site is situated within sub-area 5 of the Redington/Frognal Conservation Area; however no Tree Preservation Orders are present on site or within the immediate vicinity (as confirmed in an email by Camden Council on 22nd October 2019). Any works to trees must therefore go through the correct notification procedures.

In order to ensure the successful integration of retained trees into the proposed development, various tree protection measures will be incorporated into the design which are intended to maintain the trees in a safe and healthy condition. Further details of these are contained in section 9.0 of this report.

2 Introduction

2.1 The Author

This document has been prepared by Ryan Lloyd, an ADAS Arboricultural Consultant. Ryan is a member of the Arboricultural Association and has diplomas in both Horticulture (Level 3) and Arboriculture (Level 4). Ryan has 5 years of experience within the arboricultural industry, both in the Public Sector as a Tree Officer and in the Private Sector as an Arboricultural Consultant.

2.2 Client Instruction

This report was commissioned by Atlantic Contracts in August 2019 and is pertinent to the site known as 22 Heath Drive, Hampstead, London, NW3 7SB.

2.3 Purpose of Report

The purpose of this document is to provide reference and clarification on aspects of tree protection and any necessary tree management works for the proposed development. It is proposed to achieve this by setting out a methodology for all proposed works that may affect trees which are to be retained on and adjacent to site.

This document is also intended as a reference point for all site operatives and a copy will remain with the site manager for the duration of the development.

This document may be used as a point of reference if there were to be a dispute over compliance with related planning conditions.

2.4 Tree Survey Methodology

An initial tree survey, to establish the tree constraints on the site, was carried out by Ryan Lloyd of ADAS on 13rd August 2019.

The tree survey was carried out in accordance with the recommendations contained within BS5837:2012.

All trees have been visually inspected from ground level unless otherwise stated, with no climbing or boring tests being undertaken. The comments made on their condition are based on observable factors present at the time of inspection.

The information, shown in **Table 1** below, was recorded as part of the tree survey.

Column Heading	Description
Tree Ref No.	All individual trees and groups of trees have been given a unique reference number. Each number is prefixed by a letter. ▪ T = Individual tree

Column Heading	Description
Species	The English common name has been used, with the scientific name in brackets.
Single or Multiple stem (S or M)	▪ 'S' represents a tree which has a single clear stem to at least 1.5m above ground level. ▪ 'M(a)' represents a tree where the main stem divides into two to five stems below 1.5m above ground level, and ▪ 'M(b)' represents a tree where the main stem divides into 6 or more stems below a height of 1.5m.
Height (m)	Where possible tree heights are measured using a laser. In some instances such as in close groups of trees, one height may be measured and other nearby trees estimated from this height. Measurements are provided in metres.
Stem Diameter (mm)	S_n represents the stem number. Measurements are provided in millimetres at 1.5m above ground level for single stemmed trees.
Branch Spread (m)	Measured in metres to the four cardinal compass points (N, E, S, W).
Crown Clearance	(1) Height in metres of the first significant branch, and the direction of growth. (2) Height in metres of lowest part of crown.
Life Stage	The stage at which the tree is within its lifecycle (Y = young, SM = semi-mature, EM = early-mature, M = mature, OM = over mature, V = veteran)
General Observations	Any relevant observations are recorded, with particular reference to structural and/or physiological condition.
Preliminary Management Recommendations	Recommendations are made where management work is required for reasons of health and safety or sound arboricultural management.
Estimated Remaining Contribution (years)	An estimation of how long the feature will contribute to its surroundings. This is recorded in bands of either <10 years, 10+ years, 20+ years and 40+ years.
Tree Quality Grading	The trees are graded to the categories prescribed within BS5837:2012 (U, A, B & C). Details of this grading system can be found in **Appendix 8.**
Root Protection Area	Calculated as prescribed in section 4.6 of BS5837:2012, provided as an area (m^2) and a radius from the tree's stem (m).
Note: Those measurements shown in *italics* have been estimated, usually where access has restricted it being taken.	

Table 1: Tree Survey Schedule heading descriptions

3 Assumptions and Limitations

The Tree Protection Plan (TPP) contained in **Appendix 3** has been developed from the tree survey information and the two Planning Site Layout Plans (drawing refs: Front Garden Master V1 & Rear Garden Master Plan V6).

This report also assumes that the design layout demonstrated on the TPP is the final layout.

This report is only intended for use by the person(s) or company named on the front cover.

This report is not a full hazard or risk assessment of trees and should not be used as such.

Trees are living organisms and are constantly adapting to their ever-changing environment. No tree is completely safe and there is no guarantee that problems or deficiencies may not arise in the future, which have not been identified in this report. Therefore, this report is only valid for a period of 1 year from the date of the initial site inspection.

4 Legislation

4.1 Tree Preservation Orders and Conservation Areas

Local Planning Authorities (LPAs) have the power to preserve selected trees and woodlands through the making of Tree Preservation Orders (TPOs). Similarly, special provision is provided to trees located within Conservation Areas (CAs) which are not the subject of a TPO. The LPAs powers to do this are provided by the following Act of Parliament and its associated regulations:

- *Town and Country Planning Act 1990*
- *Town and Country Planning (Determination of Appeals by Appointed Persons) (Prescribed Classes) (Amendment) (England) Regulations 2008*
- *Town and Country Planning (Trees) (Amendment) (England) Regulations 2012*

The principle effect of a TPO is to prohibit the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without first obtaining the consent of the relevant Local Authority.

Where works to trees within a CA are proposed, six weeks notification must first be given to the relevant Local Authority.

Unauthorised works to trees either protected by a TPO or those that are located within a CA, could result in an unlimited fine for each tree.

Using Camden Council's online GIS tool, it was confirmed on the 17th October 2019 that the site is situated within sub-area 5 of the Redington/Frognal Conservation Area. Any works to trees must therefore go through the correct notification procedures. An email was sent to Camden Council on the 18th October 2019 in order to establish whether there any Tree Preservations Orders are present within the site itself

or cover any other trees surveyed outside of the site boundaries. A reply was received on the 22nd October 2019 confirming that none of the surveyed trees are protected by a Tree Preservation Order.

4.2 Wildlife Legislation

The following Acts and Regulations are the main pieces of legislation that protect wildlife and habitats in England and Wales:

- Wildlife and Countryside Act 1981 (as amended)
- Conservation of Habitats and Species Regulations 2017
- Protection of Badgers Act 1992
- The Hedgerows Regulations 1997
- Countryside and Rights of Way Act 2000
- Natural Environment and Rural Communities Act 2006 & Environment (Wales) Act 2016

The Wildlife and Countryside Act 1981 provides statutory protection to wild birds, their nests (whether in use or being built), as well as other wild animals such bats and their roosts. It is a criminal offence to recklessly or intentionally destroy any wild bird, its nest or eggs, or any bat or its roost (even if it is not occupied at the time). Other wild animals afforded statutory protection and which may be affected by tree works include: badgers and their setts, otters and their places of shelter (often in exposed tree roots along river banks), hazel dormice, their breeding sites and resting places (well-structured woodland and scrub), and red squirrels and their nests (dreys). Where works might result in an offence being committed, advice will be required from a suitably experienced ecologist before they can be undertaken. For example, it may be necessary to programme tree work outside of the bird nesting period, typically March to August inclusive.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are strictly protected sites designated respectively under the EC Habitats Directive and the EC Birds Directive. In England and Wales, SACs and SPAs are given legal protection by The Conservation of Habitats and Species Regulations 2017, which transpose the EC Habitats Directive and EC Birds Directive into national law. The Regulations ensure that any plan or project that may damage an SAC or SPA can only proceed if certain strict conditions are met.

The Conservation of Habitats and Species Regulations 2017 also provide additional legal protection to some species, including bats (all species), otters and hazel dormice.

Sites of Special Scientific Interest (SSSIs) are areas notified under the Wildlife and Countryside Act 1981 as being of special interest for nature conservation or their geology with additional protection afforded to them by the Countryside and Rights of Way Act 2000. Under the legislation Natural England (NE) or

Natural Resources Wales (NRW) must be notified of any planned works or operations that could potentially damage an SSSI or its features of interest before they are able to proceed.

The Natural Environment and Rural Communities Act 2006 and Environment (Wales) Act 2016 place a statutory duty on public authorities (public bodies and utility companies) to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of their functions.

The above provides only a brief summary of the legislation. It is advised that the original text of the relevant legislation is consulted for the exact wording. If necessary, advice should be sought from a suitably qualified ecologist prior to any tree works being undertaken.

5 Site Description

The site is a residential plot in the Borough of Camden, approximately 5.5 miles from the centre of London. A single detached dwelling sits slightly to the north of the site. The front garden (north of the dwelling) comprises two car parking spaces, one to the east and one to the west of site. The remainder is laid to lawn with a hedge being the northern boundary treatment facing Heath Drive. The front garden has a level variance of approximately 80cms.

The rear garden consists of a small patio area abutting the dwelling and an embankment to its southern end. The remainder of the garden is laid to lawn and within this lawn a large Oak tree is growing. The boundary treatments to the west are a mix of bamboo, Thuja and fencing and to the east is a mix of 3ft fencing and shrubs.

A brief desk top study using the British Geological Societies website 'Geology of Britain Viewer' has revealed that the dominant soil type in this area is likely to have a high clay content with the bedrock being Claygate Member. It is however advised that a more detailed assessment is carried out to fully assess the soil type and if the soil is found to exhibit shrinkable characteristics, then careful consideration should be given to the design of any buildings and foundations within close proximity to trees.

It is also recommended that particular attention is given to the guidance provided in the National House Building Councils (NHBC) Standard Chapter 4.2. Further arboricultural advice can be provided on this subject if required.

6 Arboricultural Impact Assessment

Ryan Lloyd has assessed the proposals in relation to the existing tree stock on the site.

The tree stock has been assessed under the following categories and the findings are summarised in Table 1:

- *Trees proposed for removal. This includes trees:*
  - *that are affected by the development proposals*
- *Retained trees that require extra protection due to their proximity to proposed work areas*
- *Retained trees which are unaffected by the development proposals*

Impact	Reason	Tree Quality Assessment Category Grading*				Totals
		A	B	C	U	
Trees, groups, and woodlands to be removed	▪ Direct conflict with proposals	-	-	H1	-	**1**
Retained trees, groups, and woodlands that are at risk of damage due to proximity to proposed works	▪ Potential damage during construction process	T1, T3			G1	**3**
Retained trees, groups, and woodlands which are unaffected by the development		-	-		T2	**1**
					Total	**5**

Table 1: Arboricultural Implications Assessment

7 Preliminary Tree Work

7.1 Tree Retention and Removal

To accommodate the proposals, as shown on the Tree Protection Plan, one hedgerow (H1) are to be removed due to a direct conflict. This specificially relates to the installation of a new sliding gate and fence on the northern boundary of the site.

During the Arboricultural Survey, it was believed that H1 merited no higher grading that a category C. This is due to its size and limited landscape value.

It is not believed that a category C hedge should pose any major constraint to development and it has been confirmed that the hedge will be almost fully replanted with a different species, Portuguese Laurel, therefore negating the impact on the amenity value of the Conservation Area.

7.2 Tree Work Schedule

A schedule of tree work has been provided within **Appendix 4**. All tree work will be carried out prior to commencement of construction activities and prior to the erection of the tree protection measures.

7.2.1 Standard of Tree Work

All tree work and felling operations will be carried out in accordance with BS3998:2010 'Recommendations for Tree Work'; current arboricultural industry guidelines and best practice; and all relevant Health & Safety standards. Tree work is a specialist task that requires operatives to be appropriately qualified, skilled, and adequately insured. Guidance on selecting an appropriate contractor can be obtained from the Arboricultural Association, who also maintains a directory of Approved Contractors. The Arboricultural Association can be contacted on 01242 522152 or via their website http://www.trees.org.uk.

7.2.2 Wildlife Constraints

As mentioned in section 4.2 of this report, all tree work operations must comply with The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000, which provide statutory protection to birds, bats and other species, all of which could inhabit trees. Where works may constitute an offence, advice will be acquired from a suitably qualified person before works are able to proceed. For example, it may be necessary to programme tree work outside of the bird nesting period, typically March through to August inclusive.

7.2.3 Modification to Tree Work Schedule

Should the recommended work schedule require modifying, for whatever reason, this will be agreed with the appointed Arboricultural Consultant, and also approved in writing by the LPA. Under no circumstances will the appointed contractor deviate from the Tree Work Schedule contained in **Appendix 4**, unless approved in writing by the LPA.

8 Arboricultural Input

8.1 Site Monitoring

The developer should appoint an Arboricultural Consultant to monitor the tree protection measures on site and be present during the hand-digging excavations which will be required to the front of the

property. The purpose of this is to ensure no undue harm is caused to any trees shown for retention on site, with particular regard to T2 given the extent of the works within its RPA.

This role will initially entail the Arboricultural Consultant liaising with the developer and the LPA to ensure the recommended protection measures are suitably installed.

Where completed, a formal record of supervisory visits should be recorded and kept on file; a copy should also be circulated to all relevant parties, including the LPA.

8.2 Key Contacts during Development

A list of key contacts relevant to this site that may be required throughout the duration of the development has been included in **Appendix 5**.

9 Method Statement

Although these methodologies set out the precautions to be followed in order to ensure the retained trees are protected, the final responsibility for their installation lies with the site supervisor who must ensure that all current legislation and best practice is followed and that they are installed in a safe manner.

9.1 Construction Exclusion Zone (CEZ)

The CEZ is defined around the retained trees by the tree protection barriers shown by an orange line on the TPP. Where possible the CEZ is positioned to protect both the crowns and the Root Protection Areas (RPA) of the retained trees. Guidance on RPA's is contained in **Appendix 9**.

9.2 Storage of Materials

It is accepted that storage of materials, or any form of chemical should kept at a minimum distance which is outside of the crown and RPA's of retained trees. This will mean that either:

- A storage area must be created to the northern end of the proposed outbuilding, where there are no trees, or;
- All materials must be transported to site only on the day in which they are required and all unused materials must be removed from site as soon as possible

The first option would be preferable to the second, however; this will be decided at a later stage.

9.3 Barriers

In line with Section 6.2.2 of BS 5837:2012, which requires that the tree protection barriers (TPB) be fit for the purpose of excluding construction activity and that they provide adequate protection to the trees and hedge, it is proposed that they will consist of 2m tall welded mesh panels supported on concrete feet. Each panel will be secured to its neighbour with a minimum of 2 anti-tamper couplers secured so that they can only be undone from inside the CEZ. The panels will be further supported by stabilizer struts

which will be pinned to the ground. An example of this type of barrier is contained in **Appendix 6**. The location of the tree protection barriers is provided on the TPP contained in **Appendix 3**. Their precise location and construction will be agreed on site between the appointed arboricultural consultant and the LPA before any site works commence.

Inside the CEZ the following prohibitions will be complied with:

- *No excavations, including by hand; unless approved by the LPA;*
- *No storage of machinery;*
- *No storage or handling of building materials, fuel, chemicals or spoil;*
- *No fires;*
- *No vehicular access;*
- *No pedestrian access; unless approved by the LPA;*
- *No alteration, increase or decrease, to existing ground levels; unless approved by the LPA;*
- *No excavation or installation of services; unless approved by the LPA.*

In order to ensure that the CEZ remains intact, the tree protection barriers will not be moved or temporarily dismantled except in the situations previously mentioned.

To enable site operatives to appreciate the purpose of the protective fencing and reduce the risk of operatives attempting to move them, all-weather notices will be erected on the barriers similar to the example in **Appendix 7**. The barriers will only be adjusted or removed if prior written approval is obtained from the LPA.

It is proposed that Tree Protective Fencing will be placed at a 0.8 metre distance from the extents of the proposed extension, in order to ensure an adequate working area can be provided (for pedestrian use only). This will create an exclusion zone around T1, although it is noted that the outbuilding itself and the necessary working area will represent an incursion into T1's RPA. This equates to approximately 11.5%, which is far below the maximum recommended 20% of RPA cover.

It is not seen as expedient to position tree protective fencing in the area surrounding T3, along the western boundary of the site, given that the area is currently outside that of the development.

9.4 Temporary Ground Protection

Given the constrained nature of the site and the inability to work in areas outside of the Root Protection Areas, it will be necessary to install Temporary Ground Protection (TGP) to the east of T1.

The specification of the TGP will be that which is able to sustain a rigid and safe working environment, withstanding the maximum possible load which could reasonably be expected on site. Due to the fact that only pedestrians and very light machinery, the maximum expected load should be considered as no more

than 1 tonne. An example of the TGP can be found here: https://www.multimatts.co.uk/temporary-access-mats/temporary-walkways/safe-site-matting-1200mm-800mm-22mm-20kg

The TGP will be placed in the area of the proposed outbuilding and in the area to the west of the outbuilding. The TGP will then be removed on a reactive basis as and when the piles are installed, until construction is complete.

9.5 Excavations

9.5.1 Removal and Replacement of Existing Hard Surfacing

In order to complete the works, it will be necssary to remove and replace the existing hard surfacing where the current driveways for the property are. This means a rectangular area to the east of the front garden and another to the west will require breaking up and removing by hand given that they are within the RPA of T3. The size of these areas are 18.9m2 and 14.43m2, equating to 2.4% and 3.1% of T3's RPA, respectively.

The sub-base in both areas is to be left untouched. Although root presence in the western area is likely to be negligible, it will ensure the rooting environment remains undisturbed.

A permeable resin-bound surface is to be laid on top of the existing sub-base in order to promote on-site drainage; however it will also allow gaseous exchange which will improve the soil beneath.

9.5.2 Proposed Driveway Excavations

The central area of the front garden is to be excavated to create an even parking surface from its western entrance. Only hand-digging will be permitted and it will be necessary to ensure an Arboricultural Consultant is on site at all times during the excavation phase.

The excavation will be to a maximum depth of 80cms from its eastern end. The total area being excavated measures 35.46m2. This reperesents 5.8% of T3's RPA. It is important to note that the nearest excavation point to the retained tree T3 is circa 4.5m.

Should any large/structrual roots be found then liasion may be necessary with the LPA in order to establish whether there are any viable solutions to either pruning or repositioning them. If no viable solution can be found, then the client must be aware that the design may have to be altered to accommodate these tree roots.

In addition to the above, the new driveway will be completed using a 'no-dig' construction method. An example of this can be found in **Appendix 10** of this report.

9.5.3 Excavation Methodology

The following will be relevant to the excavation methodology:

- *All excavations will be carried out using hand tools only.*

- *Any exposed roots smaller than 25mm in diameter will be pruned back to a side branch using a proprietary cutting tool such as bypass secateurs.*
- *Any exposed roots over 25mm in diameter will only be pruned after consultation with the retained Arboricultural Consultant and possibly the LPA. These roots may provide important structural support to the tree and their removal could render the tree unsafe.*
- *The size of any excavations will be kept to an absolute minimum and the final design will be approved in writing by the LPA prior to commencing the works.*
- *The exact location of the proposed excavations will be agreed and marked out on site in conjunction with the retained Arboricultural Consultant prior to commencing the works.*
- *No spoil will be dumped within the RPA, it will be removed from site immediately.*

An Arboricultural Consultant will provide a Watching Brief whilst these works are being undertaken to ensure the health of the tree or integrity of the rooting system does not deteriorate.

9.6 Construction of Outbuilding

The exact foundation type is yet to be confirmed; however, two options present themselves well in relation to this project having minimal effect on the RPA's of T1 and G1:

1. Screw-Piled Foundations – These metal 'screws' can be installed using a piece of hand-held machinery, which does not come into contact with the soil. The thin, pole like structures do not require any actual excavation and can be bolted to the raft. These would have a negligible effect on the RPA of T1 and G1.
2. Standard Piled Foundations – This method would require holes of no more than 20x20x90cms to be hand-dug (the exact number cannot yet be confirmed but it is likely to be 10 or under). The holes will be lined at the base and along the side walls with a non-permeable continuous sheet of plastic, with a minimum thickness of 0.5cms, before pre-mixed concrete is poured into the hole.

After the foundations have been completed, the remainder of the extension can then be constructed.

9.7 Utility Connections

At the time of producing this report ADAS have not been made aware of any utility installations, which would have to be placed below ground within the RPA's of existing trees. If this does change however, then it would be necessary to revaluate the Arboricultural Impact and alter locations where necessary.

10 Conclusions

The tree survey undertaken by Ryan Lloyd of ADAS on 13th August 2019 identified a total of five tree features consisting of three individual trees one group of trees and one hedgerow on the site known as 22 Heath Drive, Hampstead, NW3 7SB; situated in the Redington/Frognal Conservation Area.

Of the five tree features on site at the time of the survey, one low quality C grade hedgerow (H1) will need to be removed to facilitate the proposed development. The landscape masterplan submitted in conjunction with this application details that the Privet hedge is to be replaced with a Portuguese Laurel hedge, meaning that within the short to medium term the amenity value of the Conservation Area will not be reduced.

In order to ensure the retention of all four tree features, various protection methods have been identified within this report, including, but not limited to: Tree Protection Barriers; Temporary Ground Protection; Piled Foundations and Hand-Dug Excavations.

ADAS are satisfied that, providing the recommendations contained within this report are followed, the proposed development of the site can be successfully achieved without causing undue harm to those trees identified for retention. The current layout allows the retention of all moderate value trees on site, and the proposed tree losses will not have a significant negative impact on the treescape of the area.

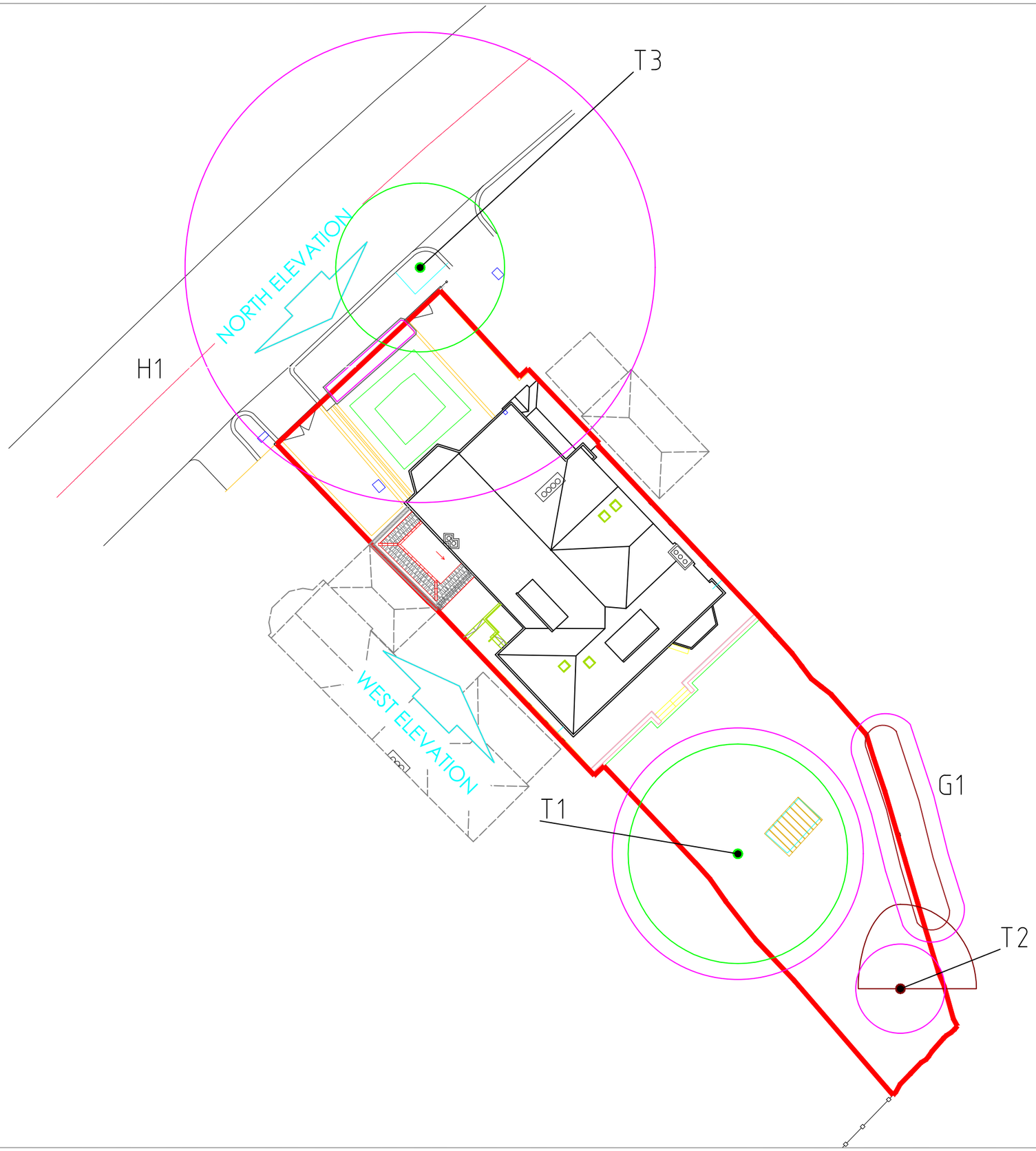
Appendix 1: Tree Survey Schedule

See following page

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	Branch Spread (m) N	E	S	W	Existing Height AGL (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Category Grading	Root Protection Area (m^2)	(radius in m)
T1	Pedunculate Oak	S	19	620			6.5	6.5	6.5	6.5	4.5-W		EM	Tree showing good vitality Characteristic for species No major defects were noted	None	40+	A2	173.9	7.44
T2	Cherry sp.	S	5	220			5	4.5	0	2.5	2.5-N		SM	Poor quality tree Contorted stem and acute lean to north Previously pruned Major deadwood visible within crown (approx 40%)	None	<10	U	21.9	2.64
T3	London Plane	S	18	1160			5	5	5	5	3.0-N		M	Previously pollarded (now lapsed) Growing within footpath on Heath Drive Epicormic growth from 2.5m Characteristic for species No major defects were visible	None	40+	A2	608.8	13.92
G1	Western Red Cedar	S	10	160			1	1	1	1	0-N		SM	Poor quality, drawn up and supressed trees planted in a linear group Limited rooting environment Weak attachments points and contorted new growth Poorly managed in the past	Fell due to proximity to properties	<10	U	11.58	1.92
H1	Privet	S	2	75			1	1	1	1	0-N		Y	Maintained hedgerow	None	10+	C2	2.545	0.9

Appendix 2: Tree Constraints Plan

See following page



Tree Survey Drawing Key

Root Protection Area m2 — T1 Tree Number

Tree Category - Coloured canopy extents denotes BS: 5837 Category

A B C U

See ADAS Tree Survey for Individual Tree Details

KEY

Site Boundary

FIRST_ISSUE	FIRST_ISSUE	16.10.19
Rev.	Issue Details.	Date.

Client:

ATLANTIC_CONTRACTS

Project:

22_HEATH_DRIVE

Drawing Title:

TREE_CONSTRAINTS_PLAN

Drawing No: AC/1019/TCP/01

Scale: 1:250@A3

Drawn by: RL Date: 16.10.19

Checked by: RD Date: 16.10.19

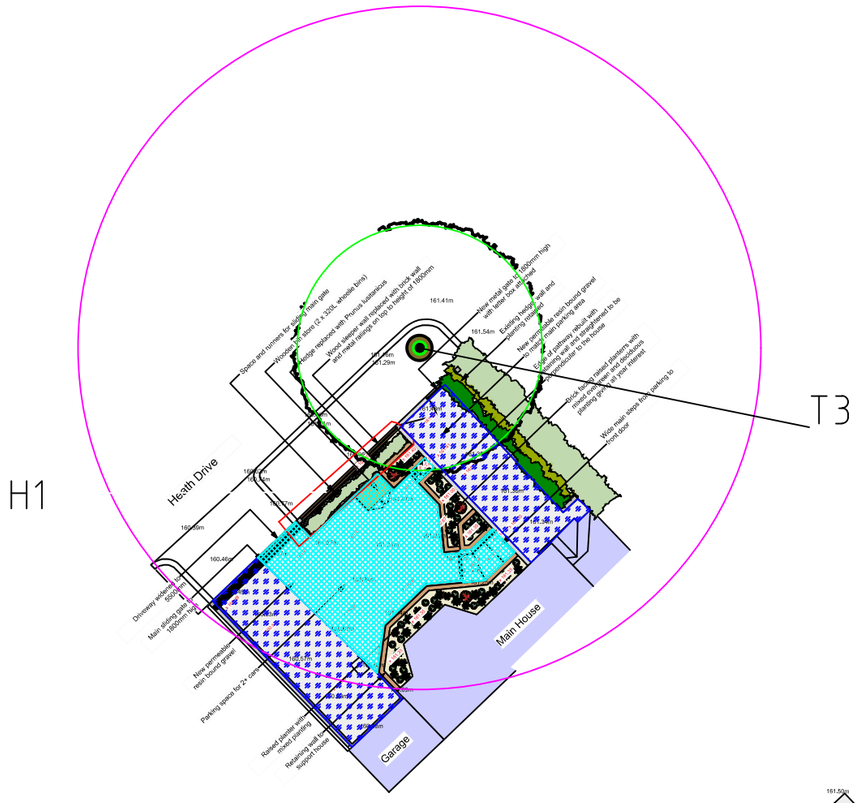
ADAS, 11d Park House, Milton Park,
Milton, Abingdon, Oxford, OX14 4RS

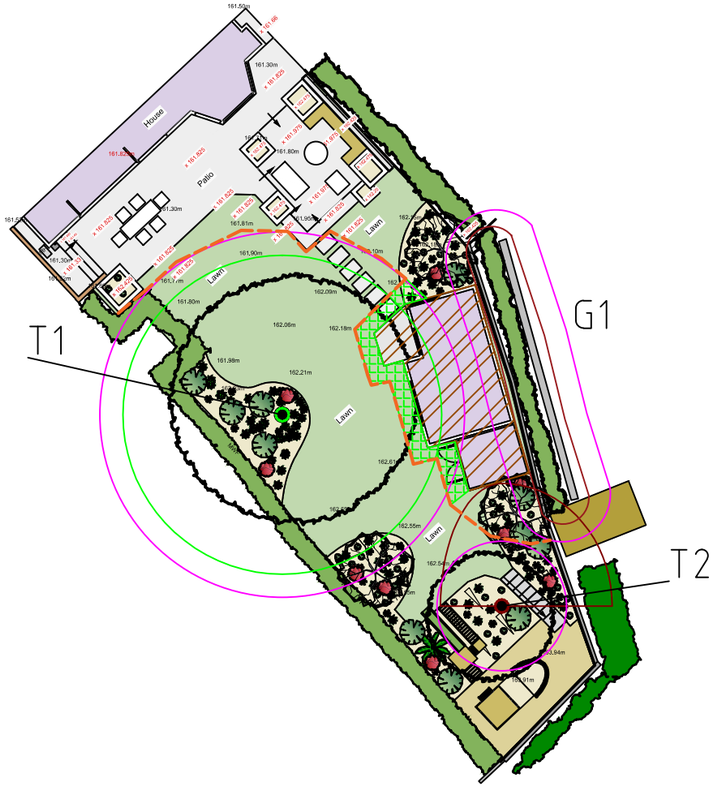
Tel: 01235 355630

DO NOT SCALE FROM THIS DRAWING

Appendix 3: Tree Protection Plan

See following page





Tree Survey Drawing Key

Root Protection Area m2 — T1 Tree Number

Tree Category - Coloured canopy extents denotes BS: 5837 Category

A B C U

See ADAS Tree Survey for Individual Tree Details

KEY

- **Position of Tree Protective Fencing**
- **Area to be Covered with Temporary Ground Protection for the duration of Outbuilding Construction**
- **Outbuilding to be Constructed using Piled Foundations**
- **Areas where Sub-Base is to be Retained with a Permeable Resin Surface to Cover**
- **Area of Supervised Hand-Digging**

FIRST_ISSUE	FIRST_ISSUE	16.10.19
Rev.	Issue Details.	Date.

Client:

ATLANTIC_CONTRACTS

Project:

22_HEATH_DRIVE

Drawing Title:

TREE_PROTECTION_PLAN

Drawing No: AC/1019/TPP/01

Scale: 1:250@A3

Drawn by: RL Date: 16.10.19

Checked by: RD Date: 16.10.19

ADAS, 11d Park House, Milton Park,
Milton, Abingdon, Oxford, OX14 4RS

Tel: 01235 355630

DO NOT SCALE FROM THIS DRAWING

Appendix 4: Tree Work Schedule

Tree No:	Species	Recommended Management Work
H1	Privet	Remove – Conflict with proposals

Accompanying Notes:

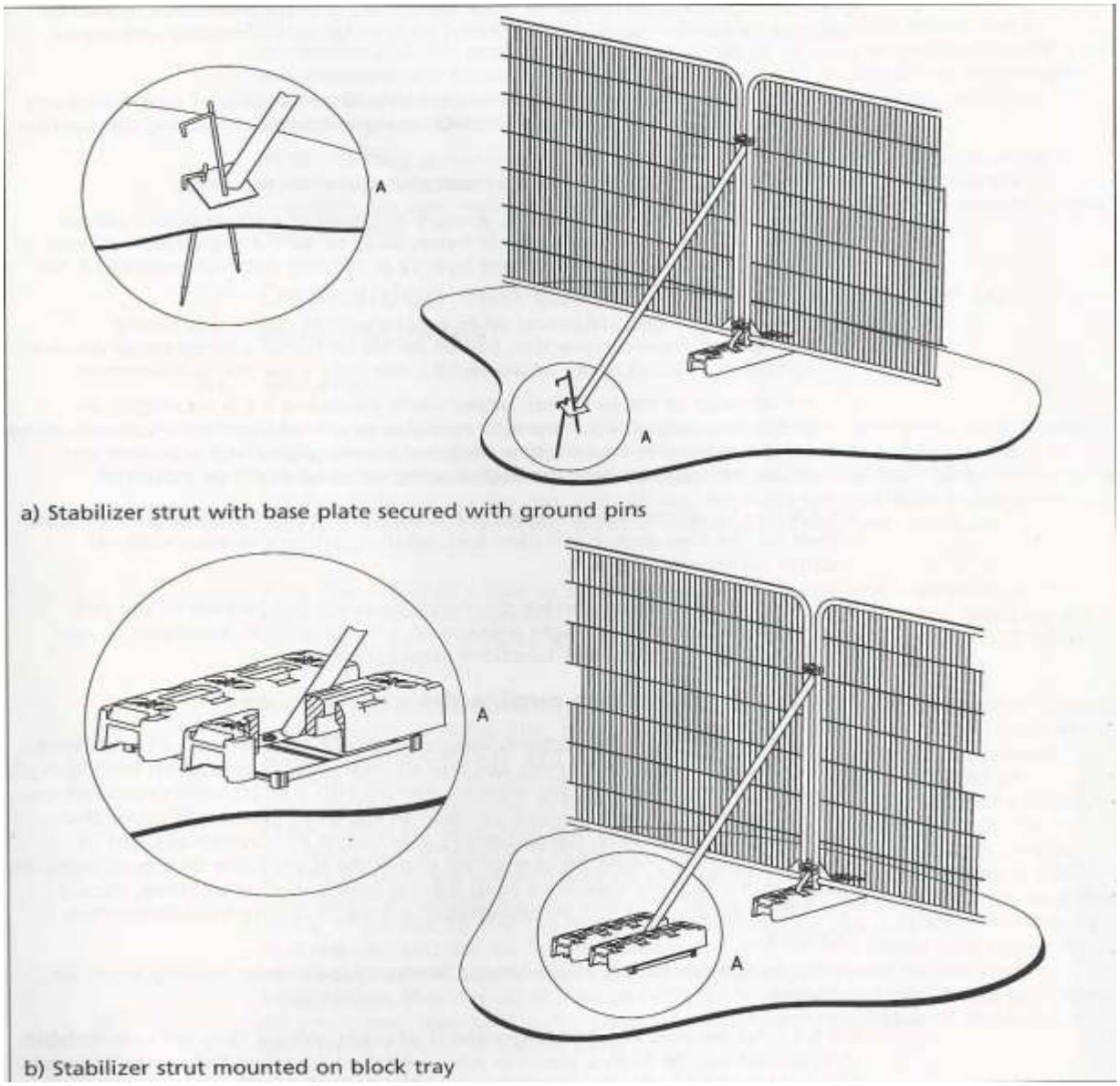
- All tree work and felling to be carried out in accordance with BS 3998 (2010) 'Recommendations for Tree Work', current industry guidelines and best practice, and all relevant Health & Safety standards;
- All operatives to be appropriately qualified, skilled, and adequately insured, for the task they are undertaking;
- All tree work and felling must comply with The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000;
- Where sections of hedges and groups are to be removed reference is to be made to the Tree Protection Plans contained in **Appendix 3** for the exact locations.

Modification to, or deviation from, the above schedule must first gain approval from the LPA.

Appendix 5: Contact Details

	Name	Main Contact and Details
Site Details	22 Heath Drive	Hampstead, London, NW3 7SB
Project Manager	Danny Miller	Atlantic Contracts Atlantic House, 7 Stirling Way, Borehamwood, WD6 2BT Tel: 020 8736 4350
Arboricultural Consultant	Ryan Lloyd	RSK ADAS Ltd 11D Milton House, Milton Park, Abingdon, OX14 4RS Tel: 07890 519192
Local Authority:	Camden Council	5 Pancras Square, London, N1C 4AG

Appendix 6: Example Tree Protection Barrier



Appendix 7: Example Tree Protection Barrier Sign

Appendix 8: Cascade Chart for Tree Quality Assessment

See following page

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those 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	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix 9: RPA Guidance

The Root Protection Area (RPA) is calculated from the stem diameter of the tree, in accordance with the guidance contained in section 4.6 of BS 5837:2012.

These areas are normally sacrosanct, and should not be entered, by traffic or foot, during construction, or used to store materials, fuel or chemicals.

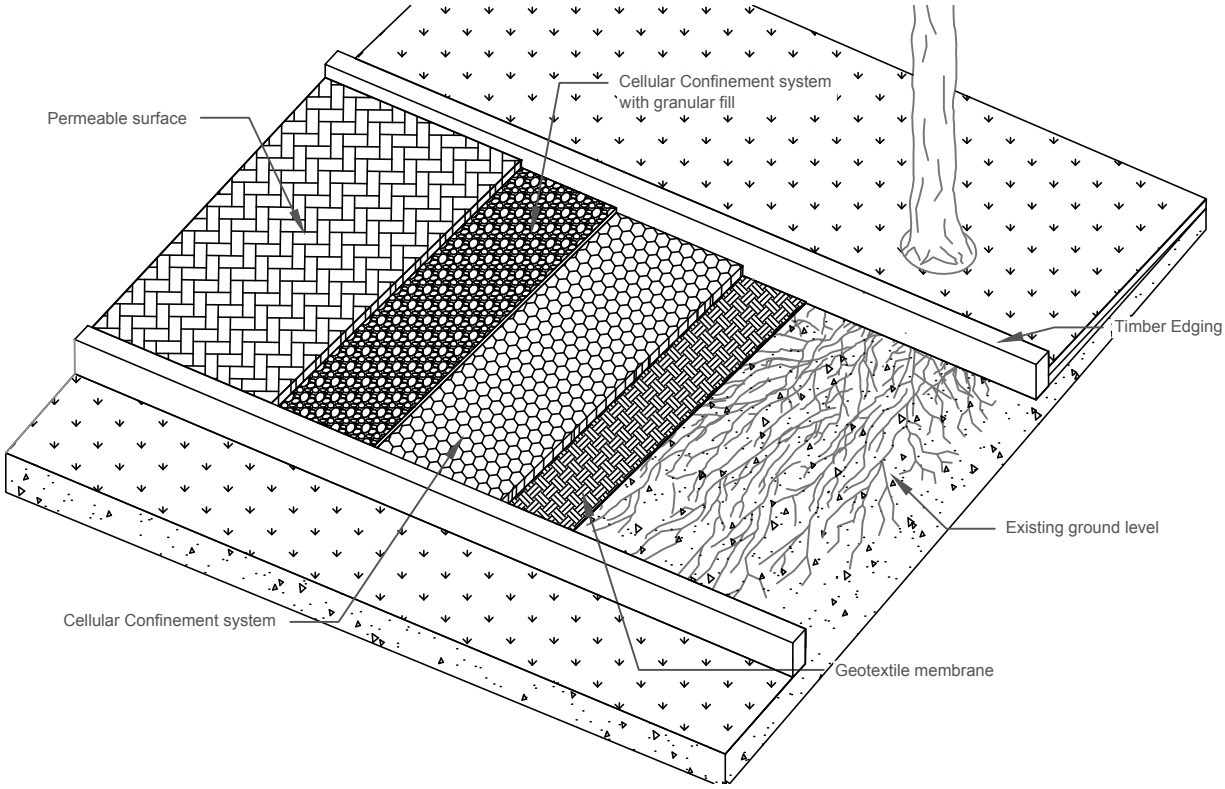
Protective fencing should be erected along the edge of the RPA, before construction begins, and should not be moved until after all construction has finished and vacated the site. The type of fencing used should be fit for purpose, and ordinarily conform to the recommendations given in section 6.2.2 of BS 5837:2012 and be erected similar to the example shown in Figure 2 of the same standard.

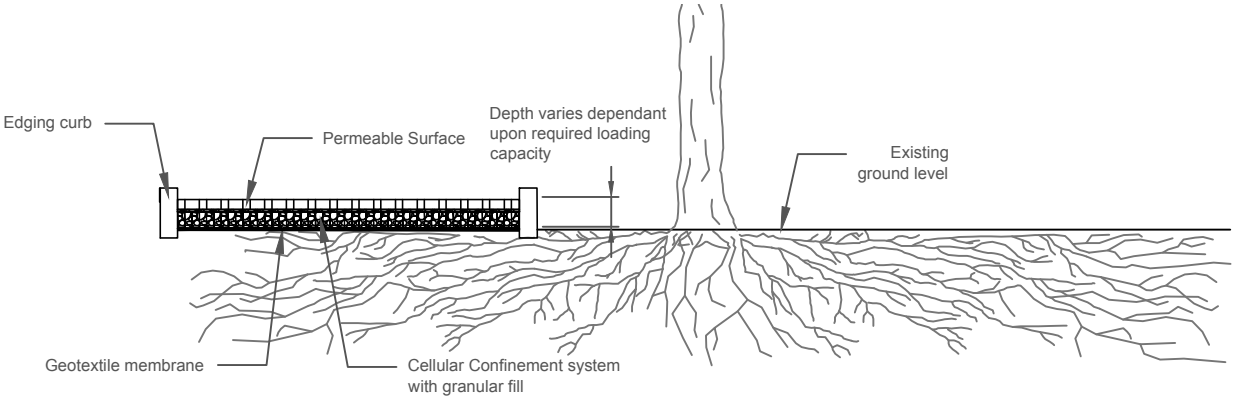
Where underground services cannot be routed outside the RPA, these should be installed by trenchless technology, such as a directional drill. Where this technology is used the underground channel created should be no less than 600mm below normal ground level, or the base of the tree. Also, the starting and receiving excavations should not be within the RPA. Drill channel lubricant should be avoided, other than water, unless precautions are taken to prevent contamination of soil and possibly water. Hand digging may be an alternative to trenchless excavation, but this is less desirable, and not always practical.

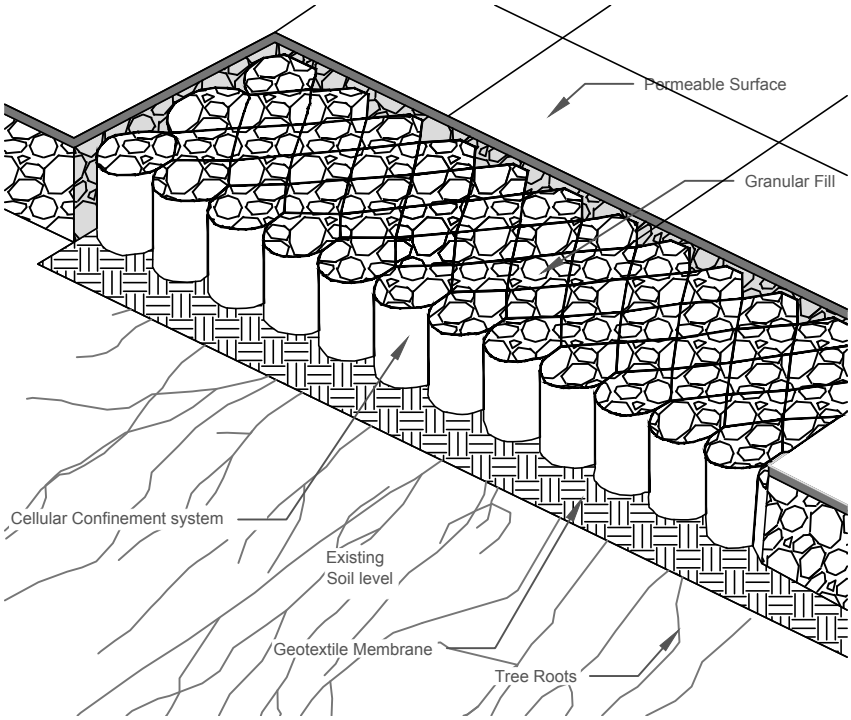
When determining the workable space around the RPA of a tree or trees, it is also important to maintain a working zone of one metre (which is usually sufficient) between the edge of construction and the protective fencing.

Appendix 10: No dig cellular confinement

See following page







NOTES

masterplanning
environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

RSK ADAS Ltd
11D Park House
Milton Park
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OX14 4RS

drawing title

APPENDIX C
NO-DIG PERMANANT ROAD SPECIFICATION

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix C No Dig Specification.dwg