Landmark Trees

ARBORICULTURAL METHOD STATEMENT

8 Oakhill Avenue

London

NW3 7RE

INSTRUCTING PARTY:

Carver Farshi

REPORT PREPARED BY:

Adam Hollis

MSc ARB MICFor FArbor A MRICS C Env

Ref: KSR/61AVR/AMS/01a

Date: 21st December 2020

Contents

Appendices

1.0 Introduction

1.1 Purpose & Use of the Method Statement

1.1.1 This method statement has been prepared for the applicant's agent Carver Farshi Architects, for assistance with the discharge of planning conditions at 8 Oakhill Avenue, London NW3 7RE: Camden Council planning permission no.: 20201697/P**.** The document will address the following conditions.

4. Prior to the commencement of any works on site, details demonstrating how trees to be retained shall be protected during construction work shall be submitted to and approved by the local planning authority in writing. Such details shall follow guidelines and standards set out in BS5837:2012 "Trees in Relation to Construction" and shall include details of site monitoring and arboricultural supervision by the retained project arboriculturalist. All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage in accordance with the approved protection details.

Reason: To ensure that the development will not have an adverse effect on existing trees and in order to maintain the character and amenity of the area in accordance with the requirements of policies A2 and A3 of the London Borough of Camden Local Plan 2017.

1.1.2 This document lays down the methodology for any proposed works that may have an effect upon the trees on and adjacent to the site. It is essential within the scope of any contracts related to the development proposals that this method statement is observed and adhered to. It is recommended that this document form part of the work schedule and specification issued to the building contractors and can be used to form part of the contract.

1.1.3 Copies of this document will be available for inspection on site. The developer will inform the local planning authority within twenty-four hours if the arboricultural consultant is replaced.

1.2 Terms of Reference

1.2.1 We (LT) are instructed by the applicant to prepare a method statement for proposed development based on the above planning application with reference to BS 5837:2012 Trees in Relation to Design, Demolition and Construction.

1.2.2 For this purpose, the client has supplied us with a site survey plan E_Ground and the consented drawings (floor plans (P_Ground-1 stair A) and structural drawings (28373 Structural Scheme 20200304 WIP), etc.) as found on the council's website. We are also reliant upon our own impact assessment report CVFS/8OKH/AIA/01b and plan overlays of tree constraints contained therein.

1.3 Development Proposals & Potential Impacts

1.3.1 The principal proposals are for the reconfiguration of the rear of the property to provide an amended terrace area with new planter and a partly floating ground floor extension.

1.4 Sequence of Works

1.4.1 The sequence of works will be as follows:

- installation of Tree Protection Barrier (TPB) & ground protection
- demolition of existing landscaping
- main construction
- removal of TPB
- hard & soft landscaping

These works and their arboricultural implications are outlined in sequence below

1.5 Site Supervision

1.5.1 On this site, a site manager will be nominated to be responsible for all arboricultural matters on site. A pre-commencement site briefing/meeting between the site manager and arboricultural consultant will be held (see Table 1 below). The site manager's details will be issued to LB Camden in the minutes / site monitoring report for this meeting. During this meeting all the tree protection methods below will be studied and familiarization with requirements of this AMS. The site manager will also:

- be present on site for the majority of the time;
- have the authority to stop any work that is causing, or has the potential to cause harm to any tree;
- be responsible for ensuring that all site operatives are aware of their responsibilities toward trees on site and the consequences of the failure to observe these responsibilities;
- make immediate contact with the Arboricultural consultant in the event of any tree related problems occurring, whether actual or potential, in accordance with a tree protection protocol (see section 1.6 below).

1.5.2 At this stage, the nominated Key Personnel are as follows:

Adam Hollis Tel: 0207 851 4544
Arboricultural Consultant
Landmark Trees
info@landmarktrees.co.uk

1.6 Site Monitoring

1.6.1 Landmark Trees are to be retained as Arboricultural Consultants responsible for site monitoring for the duration of the development. As noted above Adam Hollis MSc (Arb) is the key contact, with monitoring occasionally undertaken by David Gardner MSc (Arb) (subject to any new staff intake). Site supervision will be undertaken by a qualified and experienced arboriculturalist at pre-determined and agreed time intervals as indicated in Table 1 below. In addition to specific task supervision, general monitoring of protection measures will be undertaken at least once per month, coordinated where practical with visits detailed in Table 1.

1.6.2 Routine visits will generally be unannounced. However, the arboriculturalist will also visit subject to advance notification (2 weeks) and agreement to supervise any agreed works within the RPA, in accordance with table 1 below.

1.6.3 A tree protection protocol for contingencies will be integrated into the site induction process at a pre-commencement meeting involving the developer, the arboricultural consultant, the site manager and the Council tree officer as appropriate. The protocol will be that, in the event of any unplanned incursion / accident / spillage within the RPA, the site agent should notify (by telephone) the retained arboricultural consultant immediately. The consultant will provide advice and attend site as soon as possible. This may require the stoppage of all or part of the works in the vicinity of the tree. The consultant will notify the LPA Tree Officer of the nature and extent of damage, the mitigation strategy and likely prognosis. The contact details of the LPA Tree Officer are:

Nick Bell
Tree and Landscape Officer

Phone: 0207 974 4444
Email: nick.bell@camden.gov.uk

1.6.4 The site monitoring sheet in Appendix 3 will be used to provide photographic evidence, indicate the remedial action required and timescales for remediation completion. The consultant and officer will further liaise as necessary (perhaps meeting on site) until the officer is satisfied that protection measures are again satisfactory. The action in response to incidents will be commensurate with and appropriate to the nature of any such incident. Any breach of the stipulated timescale for remediation will trigger a further monitoring report.

1.6.5 Supervision will not require the arboriculturalist to be present throughout all operations to ensure tasks are carried out as per the approved methodology, but certainly, during the key elements of proposed (and any other unplanned) incursions into the protection areas (subject to LPA agreement and for whatever reasons) to ensure the arboricultural objectives were met. However, where tasks are ongoing, provided the arboriculturalist is satisfied, and after an appropriate briefing, the supervision may be reduced to telephone and email contact between the site manager and Arboricultural consultant.

1.6.6 The Local Authority will be accorded free access to the site subject to H&S requirements; as noted at 1.6.3, any problems will be reported directly to Arboricultural consultant, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure implementation. As noted in Table 1 below, a final sign-off visit will be carried out at the end of the development and a formal letter sent to both the client and Camden Council indicating an end to the monitoring period. It is the client's duty to notify LT that the project has been completed, in order to facilitate such an inspection.

1.6.7 Landmark Trees will be instructed to provide the above monitoring. In the absence of routine payment (as per our business terms), routine monitoring will cease (temporarily or permanently) and Camden Council will be informed of the cessation of monitoring. The client will also reserve the right to dismiss Landmark Trees and replace with another arborist but must inform Camden Council.

Table 1: Site Monitoring Visits

Supervision Visit No:	Details	Lead in Time Required by LT	Action
Visit 1: Pre-Development Site Inspection (S.2.3 of AMS) To be repeated prior to Construction Phase	• To include Site Agent briefings (S.1.5) prior to both demo AND construction phases. • To confirm position of protective fencing and that it has been erected in accordance with AMS (S.2.2 and Tree Protection Plan in Appendix 2); • To check any pre-demolition/construction ground protection is in place. • To check site facilities/access are in accordance with the AMS (S.3.3).	Minimum 2 weeks	Issue a brief report with findings to Architect, Tree Officer and Main Contractor within 5 days of site supervision visit (Site Monitoring Sheet in Appendix 1).
Visit 2: Demolition of existing structure / landscaping	• Attend any demolition activities where supervision is prescribed by the AMS to ensure work is undertaken in accordance with its specification. • Date to be confirmed following formal project planning.	Minimum 2 weeks	Issue a brief report with findings to all as per Visit 1 above
Visit 3: Installation of footings within RPA (S3.4)	• Attend any excavation within RPA's where arboricultural supervision is prescribed by the AMS to ensure work is undertaken in accordance with its specification. • Date to be confirmed following formal project planning.	Minimum 2 weeks	Issue a brief report with findings to all as per Visit 1 above
Ongoing Monitoring Visits	• Periodically during 12 months (or longer) of entire project and prior to construction phase. • Visits will be based on intensity of site operations, but initially monthly visits. • Attend site to confirm protective measures are still in place / can be removed at appointed times. Ensure attendance is timed for any other key elements of proposed (and any other unplanned) incursions into the protection areas. • Pre-start landscape meeting with main contractor to confirm ongoing tree protection measures.	TBC as project develops	Issue a brief report with findings to all as per Visit 1 above
Final Site Visit - Completion of construction phase supervision visit (S.5)	After it has been confirmed that the construction phase is complete, allow removal of temporary protective fencing and ground protection. Specify any remedial work if necessary.	Minimum 2 weeks	Issue a brief report with findings to all as per Visit 1 above Provide signed arboricultural checklist (see Appendix 1)

2.0 Pre- Development Site Preparation

2.1 Arboricultural Works

2.1.1 No works are currently proposed.

2.1.2 The contractor will work within the current canopies limiting size of plant and equipment accordingly.

2.2 Installation of Tree Protection Barrier

2.2.1 The Root Protection Area (RPA) indicates the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. The default position is for the RPA's to be fully fenced off to form the boundary of the Construction Exclusion Zone (CEZ), an area based on the RPA, from which access is prohibited for the duration of the project, including the storage of any works materials and equipment.

2.2.2 A Tree Protection Barrier [TPB] comprising steel mesh panels of 2.4m in height ('Heras') should be erected to protect rear garden trees. These panels will be mounted on a scaffolding frame as shown in Figure 1 below (this is also Figure 2 of BS5837: Trees in Relation to Design, Demolition and Construction in paragraph 6.2.2.2). Street trees, T1 & 3 will be separated from the site by the box hoarding around their planting pits, and T2 and T4 will have further Heras panels, 2.4m in height, around their raised beds to protect against site access collision.

2.2.3 The TPB's are to be erected before any work (other than tree surgery) commences on site, are to remain *'in situ'* undamaged for the duration of all work or each phase, and only to be removed once all work is completed. If any work is deemed necessary prior to the erection of fencing a Landmark Trees representative should be informed to enable their presence to oversee the work being carried out.

2.2.4 The location of the TPB's are shown in the Tree Protection Plans at Appendix 2.

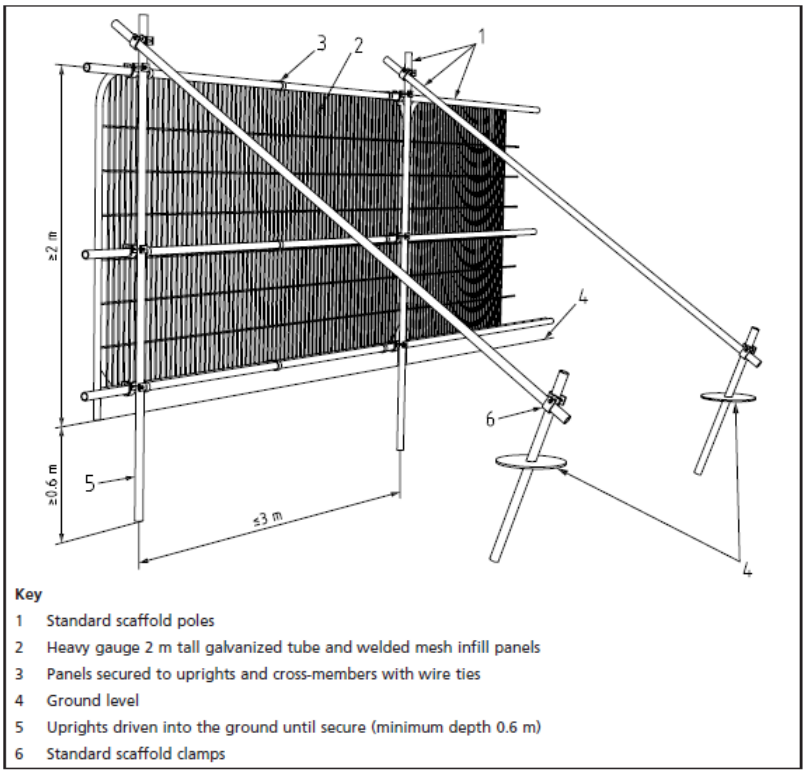


Fig. 1 Tree Protection Barrier Specification
(Source: Figure 2 from BS5837 - Default specification for protective barrier)

2.3 Ground Protection

2.3.1 Extant areas of RPA that cannot be fenced off and therefore lie outside the CEZ must be protected with fit-for-purpose ground protection. The location and type of ground protection is shown in the Tree Protection Plans at Appendix 2. As per paragraph 2.2.3, this ground protection is to be installed before any work (other than tree surgery) commences on site, is to remain *'in situ'* undamaged for the duration of all work until the landscape phase and only to be removed once all construction work is completed.

2.3.2 In order to provide a sufficient level of protection to T8 a minimum of 100mm deep woodchip overtopped with Ground Guards MultiTrack Mats will be installed between the protective fencing and exiting terrace. These mats will be secured together using their integral fasteners

Photograph 1: Example of ground protection using Ground Guards Interlocked over 100mm mulch base layer

2.3.3 The unfenced part of the RPA of T9 will be protected from pedestrian access by a 100mm layer of woodchip topped with plyboards.

3.0 Development Phase

3.1.1 The following general precautions will apply:

- No fires shall be made on any part of the site, or within 20m of any tree to be retained.
- No spilling or pouring of fuels, oils, solvents, tar shall be made on any part of the site.
- No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10 metres of the trunk of a tree that is to be retained.
- No spillage or discharge of wet mortar or concrete shall be made on any part of the site.
- No storage of materials shall be made within the protective fences.
- No breaching or moving of the protective hoarding without the approval of an arboriculturist.

3.1.2 The procedures for dealing with variations and incidents are detailed in S1.6.

3.2 Working within Root Protection Areas (RPA)

3.2.1 Although the default position is to exclude all construction activity from the RPA, this degree of protection is not entirely possible on the site: demolition of existing hard landscaping, founding of new extension, construction of extension and associated landscaping.

3.2.2 All involved parties will need to be made aware of the deficiencies. In these instances, careful and supervised working, as described in sections, S. 3.6 (demolition of surfaces) and S. 3.7 (construction) will be required.

3.3 Site Access, Accommodation & Storage

3.3.1 Site access will be as per the layout within our Tree Protection Plan (Appendix 2). Site accommodation and material storage will utitlise the existing terrace area / protected ground between terrace and protective fencing.

3.3.2 Delivery lorries will not access the site. Materials will be brought in and out by hand around the sides of the building along existing paved routes and installed ground protection. Adequate allowance must be made for material heights and ground clearance, where tree canopies overhang access routes. Any further pruning for working clearances must be discussed first with the arboriculturalist; once agreed in principle these works should be approved by the appropriate tree officer and approved in writing by the LPA.

3.4 Routing & Installation of Services

3.4.1 No new exterior services are required for this construction. The extension will be connected to the main house internally.

3.5 Changes in Grade

3.5.1 No changes in level are proposed beyond the extension itself**.**

3.6 Demolition Measures.

3.6.1 Demolition of structures within what would otherwise be an RPA will proceed with due caution to avoid unnecessary damage to trees. Such measures apply in particular to hard landscape / surfacing removal for the demolition of the existing terrace (near T8) and for the alterations of the rear garden (planter near T8).

3.6.2 All plant and vehicles engaged in demolition works (removals only) will either operate outside the RPA, or work from within the existing built structure and reinforced hard standing. It will be necessary to undertake demolition inwards within the footprint of the existing terrace (often referred to as “pull back”).

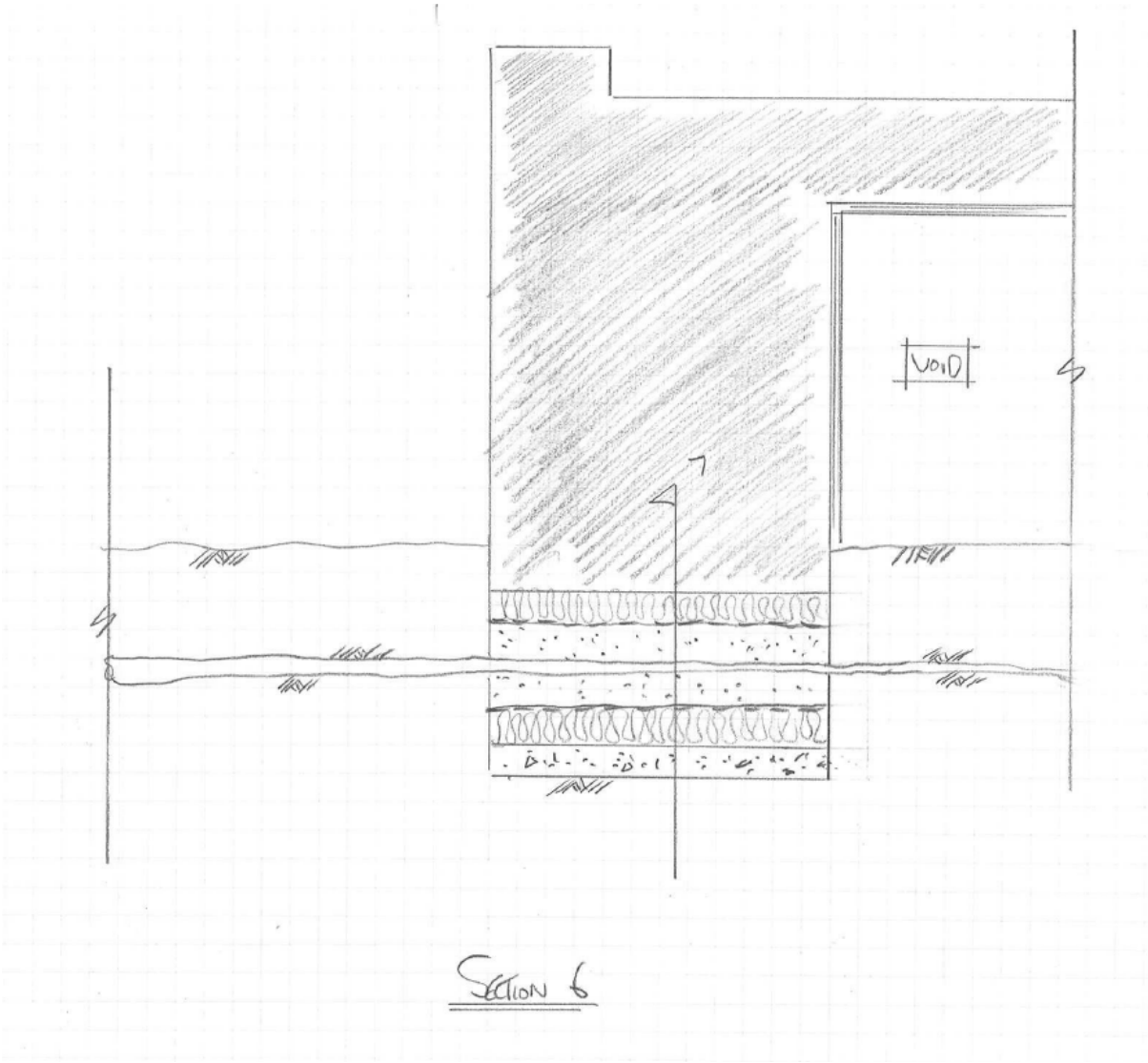
3.6.3 The existing hard standing within the RPA of T8, removal of which is necessary for the construction of the extension building will be first broken up with manual power tools and then carefully removed with light plant by a skilled machine operator, either operating outside the RPA, or working from within the existing hard standing. Existing paving slabs should be lifted by hand.

3.7 Construction Measures

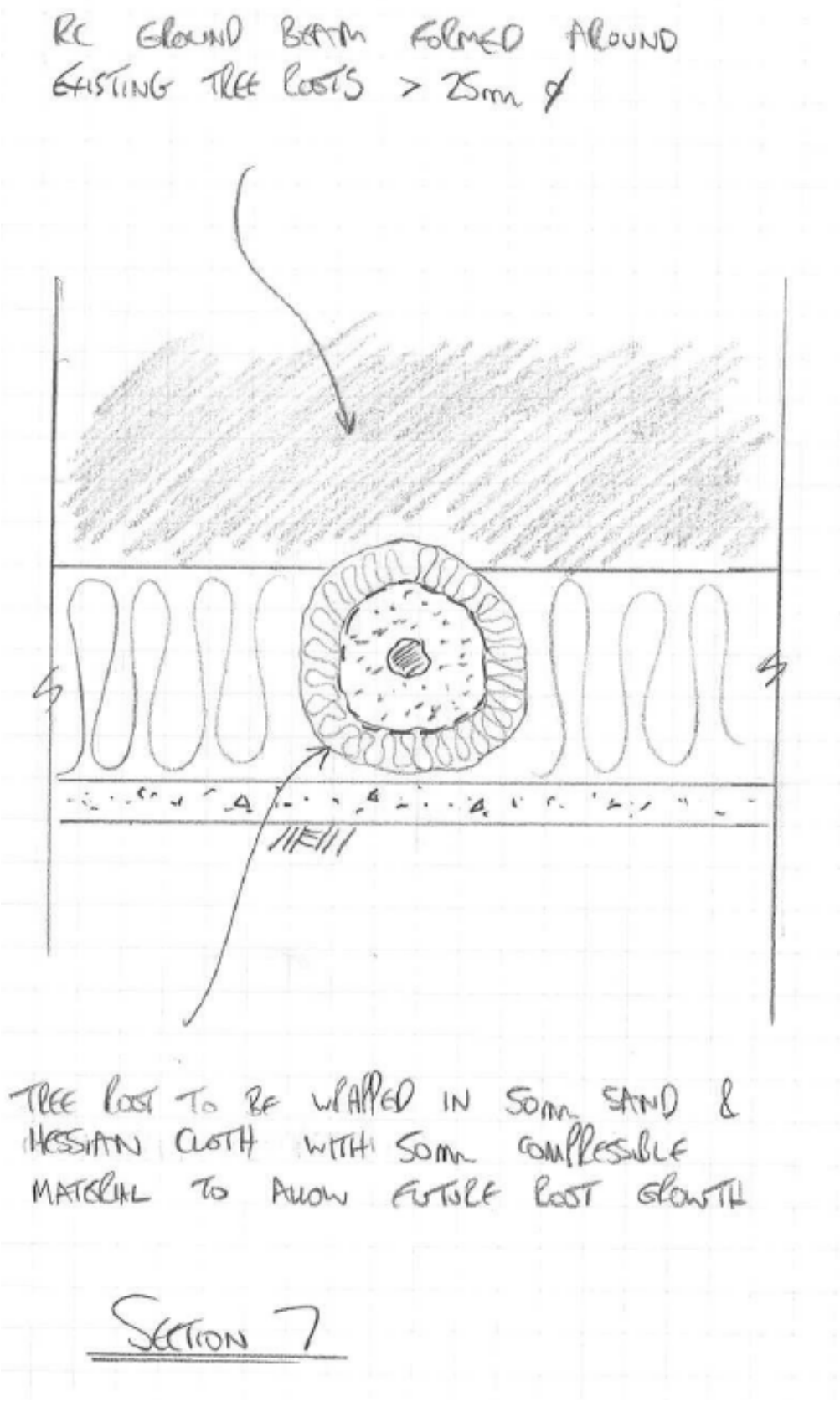
Detailed method statements and risk assessments will be obtained from all specialist subcontractors involved in the new build and these will be scrutinised by the site agent to ensure the AMS requirements have been considered therein.

3.7.1 The reinforced concrete ground beam supporting the northern elevation of the extension will be formed around existing roots with a diameter in excess of 25mm as per Plan Extracts 1 & 2 overleaf. These works will take place under arboricultural supervision. Between this ground beam and the existing terrace sub-base will be a void, with the sub-base supporting the extension where it extends over the current footprint

3.7.2 The limits of excavation within RPAs will be undertaken manually; any roots encountered will be cleanly pruned back to an appropriate junction with a sharp pruning saw or secateurs. Roots larger than 25mm diameter are to be retained as per paragraph 3.7.1.



Plan Extract 1: Section of ground beam supporting northern elevation of extension



Plan Extract 2: Section through ground beam detailing how significant roots will be retained

3.8 Removal of Ground Protection & Post Construction Landscaping & Treatment

3.8.1 The tree protection may be removed upon completion of the construction phase and any site machinery has been removed from the RPA.

3.8.2 The new hard surfacing to the front of the property will require installation using a no-dig construction method utilising an above ground cellular confinement system as the sub-base.

3.8.3 Method Statement - Specifications for installation of cellular confinement system within the RPA:

i. The Construction will be undertaken when the ground is sufficiently dry to prevent compaction occurring. Any surface vegetation should be removed by hand or with suitable herbicide.

ii. Place Root-tex 300 Geotextile over the area to be protected ensuring laps are a minimum of 300mm. The geotextile should not be trafficked across at any time.

iii. The (for example) Protectaweb system is available in 5 depths for varying traffic loadings but each site should have a specific design detailed to ensure the correct depth of product is used. However, unless the existing ground conditions are very soft and have a low CBR then the following can apply:

- 75mm deep Protectaweb for Pedestrians, Cycleways and vehicles up to 1.5 tons;
- 100mm deep Protectaweb for Cars, 4 Wheel Drives, Vans etc up to 6 tons;

iv. Roll out Root-Tex 30 Geotextile to cover the area to be protected. Insert 4 equally spaced steel pins along the width of the panel. Expand the panel over the Root-Tex 30 and the pins, extend to the required length, then pin across the opposite panel end. Pin along the length of the panel each side. If full panels are not being used then ensure the cells have been expanded to their full dimension. The ProtectaWeb panels can be cut to shape if required with a heavy duty Stanley Knife. Staple or cable tie any adjacent panels together.

v. Infill the Protectaweb cells with clean angular stone (Type 4/20mm or Type 20/40mm), working towards the tree and using the infilled panels as a platform. Use a minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface. If the area is to be trafficked immediately, slightly increase the amount of surcharge overfill to a maximum of 50mm over the ProtectaWeb with 4/20mm or 40/20mm clean angular stone. **No compaction is required of the infill. Do not use a whacker plate or other means of compaction.**

vi. The Protectaweb system may be surfaced with the materials listed below. Porous systems will be of greater benefit for the trees, however it is understood that this is not always possible.

Porous and Standard Asphalt:

- Slightly surcharge the Protectaweb with 25mm of 4/20mm or 40/20mm clean angular stone.
- Place hot Asphalt as per manufacturer's instructions.

Block / Flag Paving:

- Place Root-tex 10 separation fabric over the filled Protectaweb.
- Lay sand / gravel bedding material as per manufacturer's recommendations.
- Place porous / standard blocks as per manufacturer's instructions.

3.8.4 For technical data on the Geotextile membrane and the Protectaweb cellular confinement system always refer to the manufactures guidelines for design and implementation. Further technical advice can be gained from the manufacturer:

Wrekin Products Ltd
Europa Way
Britannia Enterprise Park
Lichfield
WS14 9TZ
www.wrekinproducts.com
01543 440440

3.8.5 All landscaping and associated ground works within RPA will be carried out manually and carefully with due regard for soil and root protection, avoiding changes of ground levels or deep digging. Mechanised cultivation must not be used within any RPA's.

4.0 Summary of Proposed Methods

4.1 Table of Impacts and Mitigation

4.1.1 The table below summarises the main areas where trees could become damaged by the proposed development and the methods that need to be adopted in order to prevent such damage:

Table 2: Summary of Proposed Methods

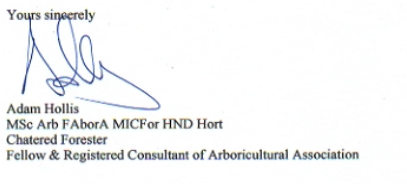
Impact	Mitigation	Reference	Trees Affected
General site access, material storage etc.	Ground protection to acceptable standards.	Paras 2.2.1 & 3.3.3 Tree Protection Plan in Appendix 2	All retained trees
Demolition of existing structures within RPA	Pull back technique within RPA	Section 3.6	All retained trees
Damage to roots caused by basement excavation within RPA.	Manual excavation of outer limits of basement within RPA to 1m depth with pre-emptive root pruning	Section 3.7	T1 & 2
Damage to roots caused by provision of new hard surfacing	No-dig construction	Section 3.8	All retained trees

5.0 Completion

5.1 Completion Meeting

5.1.1 Following completion of the works listed above, a Landmark Trees consultant will conduct a walkover survey of the trees to review any defects or signs of ill-health, and inform the local authority in a final report as per Table 1. It is the client's duty to notify LT that the project has been completed, in order to facilitate such an inspection. A separate LT post-development tree inspection (with specific reference to trees identified in the Appendix 1 schedules) is recommended to facilitate a constructive meeting.

Signed



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Adam Hollis MSc ARB MICFor FArbor A

21st December 2020

For and on behalf of ***Landmark Trees***

APPENDIX 1: SAMPLE SITE MONITORING SHEET

Landmark Trees

Site Monitoring Report Sheet

Client:		**Planning Ref:**	
Local Authority:		**Date:**	
Site Address:			
Proposal:			

Visit Checklist	**Y/N**		**Y/N**
Tree protection barrier (TPB) in place		TPB as per approved	
Ground protection (GP) in place		GP as per approved	
TPB / GP breached		Trees damaged	
Site Agent briefed by LT			
LT briefed by Site Agent			
LPA informed			
Remedial action required			

Comments

Recommendations

Outcome		
1		
2		
3		
4		

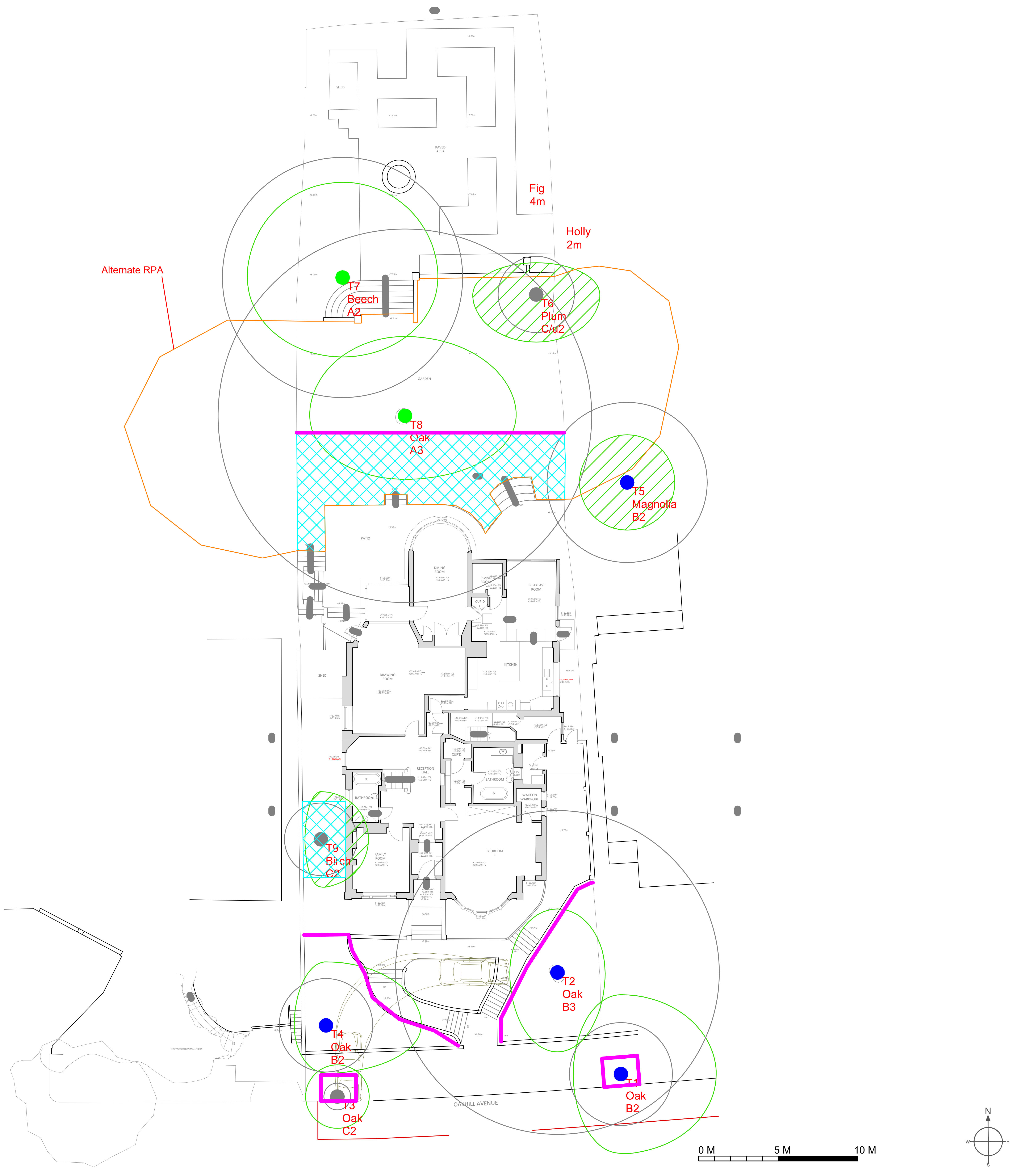
Web: www.landmarktrees.co.uk
e-mail: info@landmarktrees.co.uk
Tel: 0207 851 4544

London Office: 20 Broadwick Street, W1F 8HT, London
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR

Arboricultural Supervision Sign off Checklist

Tree No (s)	Project Phase	Task	Date Completed	Signed (Project arboriculturist)	Signed (Site Manager)
	Pre-commencement	Pre-commencement site meeting to include site manager briefing (S.1.5)			
	Pre-commencement	Confirm the location and specification of the protective measures is in accordance with AMS & Tree Protection Plan (TPP)			
	Pre-commencement	Confirm any tree works have been undertaken in accordance with this AMS (S.2.1/ App 1) and determine if further tree work is required			
	Pre-commencement	Seek required permission for further tree works if necessary.			
	Installation of any new services	Attend any excavation within RPA's where arboricultural supervision is prescribed by the AMS (S3.4) to ensure work is undertaken in accordance with NJUG provisions or other specification.			
	Demolition	Demolition of hard surfaces/ structures within RPA (S3.6) Confirm position of any additional temporary ground protection and that temporary ground protection is in accordance with AMS.			
	Completion of Demolition	Sign off of the demolition phase			
	Construction	Supervised manual excavation of foundations			
	Construction	Installation of 'No Dig' hard surfacing			
	Construction	Additional excavations (if required)			
	Completion of Construction	Completion of construction			
	Post Construction	Removal of machinery and materials from site			
	Post Construction	Dismantle & removal of protective measures			
	Landscaping	Completion of Landscaping			
	Project Completion	Sign off from project arboriculturist			

APPENDIX 2: TREE PROTECTION PLAN



NOTE:

This survey is of a preliminary nature. The trees were inspected from the ground only on the basis of the Visual Tree Assessment method. No samples were taken for analysis. No decay detection equipment was employed. The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

Branch spread in metres is taken at the four cardinal points to derive an accurate representation of the crown.

Root Protection Areas (RPA) are derived from stem diameter measured at 1.5 m above adjacent ground level (taken on sloping ground on the upslope side of the tree base).

Landmark Trees

20 Broadwick Street, London, W1F 8HT
Tel: 0207 851 4544 Mobile: 07812 989928
e-mail: info@landmarktrees.co.uk Web: www.landmarktrees.co.uk

Site: 8 Oakhill Avenue	1:200@ A2
Drawing Title: Tree Protection Plan	December 2020

Key:

- Category A High Quality
- Category B Moderate Quality
- Category C Low Quality
- Category U Trees Unsuitable for Retention
- Ground Protection

Category — Crown Spread — Root Protection Area — Tree Number — Species — Category

T3 Birch B2

Tree Position Approximate (not shown on original survey)

Tree Protection Fencing