Landmark Trees

ARBORICULTURAL METHOD STATEMENT

41 Frognal

London

NW3 6YD

REPORT PREPARED FOR:

KSR Architects LLP

14 Greenland Street

London NW1 0ND

REPORT PREPARED BY:

Adam Hollis

MSc ARB MICFor FArbor A MRICS C Env

Ref: AKN/41F/AMS/01

Date: 23rd March 2015

Contents

Appendices

1.0 Introduction

1.1 Purpose & Use of the Method Statement

1.1.1 This outline method statement has been prepared for KSR Architects, to accompany a planning application and assist with the discharge of planning conditions for the proposed development at 41 Frognal, London NW3 6YD: London Borough of Camden. The document will address the following issues:

- Precautions to minimise damage to trees.

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 client agents, KSR Architects 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 agent has supplied us with a site lay-out plan (1674_Site), the current proposals plan (14044-Sheet - P002 - SITE PLAN LOWER GROUND) and a Draft Construction Management plan prepared by Motion. We are also reliant upon our own impact assessment report AKN/41F/AIA/01c and plan overlays of tree constraints contained therein.

1.3 Development Proposals & Potential Impacts

1.3.1 The proposals include the construction of a new upper storey to the property, the construction of a single-storey basement and the addition of a 1 bed, 2 two storey residential unit in place of an existing double garage.

1.3.2 The principal primary impacts in the current proposals are low, and represent a significant scaling down of the initial conception. The most significant impact relates only to the theoretical RPA encroachment of category B plane tree T9, by both the proposed basement and ground floor elevation. Whilst the encroachment is theoretically medium, all of the excavation lies below the existing building and within areas of existing hardstandings. Furthermore, the trial pit evidence

indicates that there would be not roots in the relevant areas, below the existing tarmac hardstanding, where basement excavation is proposed. The tree would require minor crown-lifting to facilitate development, but this is rated as a low impact, affecting the small diameter branch wood only. There is also a low theoretical impact to the category B tree T8, which also occurs under areas covered by the existing building/hard standings with trial pit evidence containing no roots.

1.3.3 Accordingly, precautionary mitigation requiring the manual excavation of the top 750mm of the proposed basement line within the RPA has been recommended, with pre-emptive pruning under arboricultural supervision if required. The current proposal retains the existing drive. If it is to be resurfaced, then the current sub-base should be preserved for replacement hard surfaces. There are potential benefits to the RPAs through improved porosity, providing the existing tarmac surface is removed with care.

1.3.4 Other primary impacts from the main proposal comprise the felling of the category C tree T42, which is rated as a low impact, and was agreed as acceptable in principle with the LB Camden.

1.3.5 The proposed temporary construction access is likely to require minor tree works to T15, raising the extant canopy to the 4.5m clearance that already exists over drive. The ground clearance of the other trees along the access is 3m and above; if further tree works are required, agreement must be sought from the Tree Team at Camden. The temporary construction access will require ground protection (e.g. Arboraft) to protect the RPA and soils in general on this garden area. The existing tarmac drive will not require additional ground protection.

1.4 Sequence of Works

1.4.1 The sequence of works will be as follows:

- initial tree works – felling, stump grinding and pruning for working clearances
- installation of Tree Protection Barrier (TPB) & ground protection
- installation of supplementary ground protection
- installation of underground services
- main construction
- removal of TPB
- soft landscaping

These works and their arboricultural implications are outlined in sequence below

1.5 Site Supervision

1) Site supervision – an individual e.g. the Site Agent, must be nominated to be responsible for all arboricultural matters on site. The contractor has yet to be appointed; therefore it is not possible to detail the individual responsible for arboricultural matters. The appointed contractor will nominate an agent who must:

- be present on site for the majority of the time
- be aware of the arboricultural responsibilities - to this end, a site briefing / meeting between the agent and arboricultural consultant must be held before the commencement of each phase of works.
- 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 local authority and/or a retained arboriculturalist in the event of any tree related problems occurring, whether actual or potential
- Contact details for Landmark Trees are provided on the cover to this report.
- Contact details for the Local Authority Tree Officer are as follows:

Nick Bell
Arboricultural Officer
London Borough of Camden
5th Floor Town Hall Extension
Argyle Street
London WC1H 8ND

E-mail: nick.bell@camden.gov.uk
Telephone: 020 7974 5939

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. Key personnel are in the main Adam Hollis MSc (Arb) and occasionally James Bell Tech Cert, subject to any new staff intake. Site monitoring will be undertaken by a qualified and experienced arboriculturalist at pre-determined and agreed time intervals.

1.6.2 The arboriculturalist will arrive at the site, check in at the site office and be safely escorted around the site by the site agent, checking the maintenance of tree protection measures. Routine visits will generally be unannounced. However, the arboriculturalist will also visit subject to advance notification and agreement to supervise any agreed works within the RPA.

1.6.3 Monitoring will involve a schedule of routine visits (monthly for the first 6 months and quarterly thereafter, including both site-setup and sign-off inspections) and reports to ensure contractor compliance with tree protection measures and to provide ongoing liaison with all personnel involved in the site development (including the LPA). Any defects requiring rectifying must be notified to the Site Agent and the Client and copied to the LPA by email. Emergencies will be notified to the LPA by phone. Appropriate records will be kept and be made available to the LA if required to show evidence of site monitoring (Appendix 3).

1.6.4 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). Such supervision would require the arboriculturalist to attend site, if not the whole task, 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 foreman/ contractor and arboriculturalist.

1.6.5 In addition, a site log book will be kept by the Site Agent to record all stages of the development from the installation of the fence protection, to routine checks of the fencing through to the completion of the project. This should be made available to the LA if required to show evidence of site monitoring. Site monitoring should include:

- Pre-Development Site Inspection (S.2.3)
- Construction Site Agent Briefing (S.1.5)
- Installation of site facilities (S.3.3)
- Demolition of hard surfaces / structures within RPA's (3.6)
- Construction of new of hard surfaces / structures within RPA's (3.7)
- Site completion meeting (S.5)

1.6.6 The LPA's Arboricultural Officer will have free access to the site and report on any problem areas directly to the developer's Project Arboriculturalist, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure implementation. 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 LPA 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 N.B. Landmark Trees will only be responsible for providing monitoring in so far as they fully instructed to do so and regularly paid for such services by the client. In the absence of routine payment (as per our business terms), routine monitoring will cease (temporarily or permanently)

and the LPA 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 the LPA.

1.7 Statement Adoption

1.7.1 It is recommended that, in due course, acceptance of the recommendations in this report is demonstrated by, for example, the architect specifying in writing to the building contractor that tree care conditions apply in execution of the contract, and by an estimate or written undertaking from the contractor to the architect demonstrating that the practical aspects of observation of such recommendations have been priced in. If conflicts between any part of a tree and the building(s) arise in the course of development these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can spoil design aims and can of course affect saleability, and reflects lack of best practice. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

2.0 Pre- Development Site Preparation

2.1 Arboricultural Works

2.1.1 All works must be carried out by a competent arborist in accordance with BS 3998: 2010 and any other prevailing good professional practice.

2.1.2 Specific works recommended to facilitate development are the removal of tree T42, with pruning works including the crown lifting of T9 and T15. These specific works to facilitate development and any other husbandry works are listed in Appendix 1.

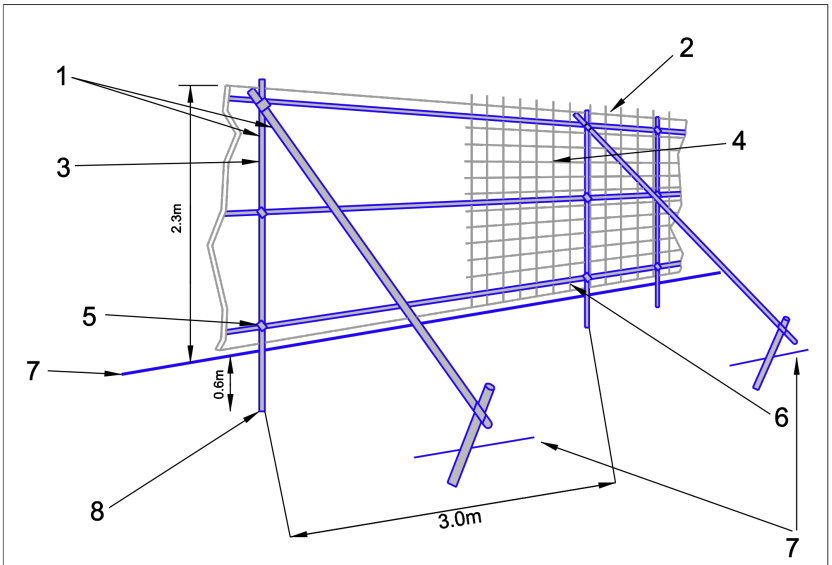
2.2 Installation of Tree Protection Barrier

2.2.1 A Tree Protection Barrier [TPB] comprising steel mesh panels of 2.4m in height ('Heras') should be erected to protect trees near buildings to be demolished on site. 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).

2.2.2 This TPB is to be erected before any work commences on site, is 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.

2.2.3 The only other exception is the completion of soft landscaping but if any excavations, however minor, are to be carried out as part of soft landscaping within RPAs, an arboricultural assessment must be carried out beforehand and any arboricultural protection measures incorporated. The TPB should carry waterproof warning notices denying access within the RPA.

2.2.4 The Tree Protection Plan in Appendix 6 illustrates where the protective fencing will be located to form the boundary of the Construction Exclusion Zone (CEZ). The CEZ is an exclusion zone and suitable steps will be taken to prevent access by pedestrians and vehicles and the storage of any works materials and equipment will be located outside of the CEZ.



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside fence of fencing to avoid easy dismantling
7 Ground level
8 Approx 0.6m driven into the ground

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

2.3 Pre-Development Site Inspection

2.3.1 Upon completion of the tree works and installation of the protection measures, the standard of work can be checked by the retained arboricultural consultant who can then liaise with the local authority. If there are any amendments to either the tree works or additional protection measures, they will be agreed at this meeting and confirmed in writing.

3.0 Development Phase

3.1 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 fences without the approval of an arboriculturist.
- Alterations in levels within the tree protection fence areas shall be avoided.

3.2 Root Protection Areas (RPA)

3.2.1 The Root Protection Area (RPA) is a desirable zone of protection around the trees' rooting system and these have been marked on the plan in Appendix 6. As much as possible, the RPA's will lie within the CEZ and therefore, be fully fenced off. However, this degree of protection is not entirely possible on the site: it is necessary to perform some works (in part) within the RPA i.e. demolition of existing hard landscaping, installation of services and construction of new upper storey to the property, the construction of a single-storey basement and the addition of a 1 bed, 2 two storey residential unit in place of the existing garage.

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. 3.4 (routing of services) and S. 3.6 (demolition of surfaces) and S. 3.7 (construction) will be required.

3.2.3 Ground outside the CEZ must be protected from site traffic and not left exposed during construction. As far as practical, existing hard surfaces should be retained as initial ground protection (where fit for purpose for anticipated loading) until the landscaping phase and / or substituted / supplemented with appropriate materials (e.g. Arboraft, noted in Appendix 5), capable of withstanding anticipated loads. **NB the provision of ground protection on plan does not prohibit the consented laying of services and related works in those areas. It means that those operations should proceed under caution and protect adjacent ground to that immediately requisitioned for the work in hand.**

3.2.3 Existing tarmac will not be adequate ground protection for heavy plant use. To this end, a concrete crossover and intensive ground protection area has been specified for the main delivery access. Crossovers for HGVs will have 150mm concrete slabs temporarily installed to protect services and tree roots.

3.3 Site Access, Accommodation & Storage

3.3.1 Site access will be as per the layout within our Tree Protection Plan (Appendix 6). Construction vehicles will park and load within the site boundary. Construction vehicles will enter the site using the existing driveway to the property and will reverse into a dedicated loading area toward the eastern boundary of the site. All reversing movements will be undertaken off the public highway and will be supervised by trained banksmen. Suitable ground protection will be provided such as Arboraft or Ground-Guards which will act to spread the load of heavy construction vehicles and will protect the underlying ground from compaction and the RPAs. Further technical data on the Geotextile membrane and the Arboraft system are contained in Appendix or can be gained from the manufacturer:

Infra Green Limited
Warrington Business Park
Long Lane
Warrington WA2 8TX
Tel. 01455 617139
www.infragreen-solutions.com

3.3.2 All materials will also be stored on-site. The property benefits from a large back garden which is clear of any tree root protection areas and thus will be used for the storage of building materials. An additional materials storage area will be provided outside the front of the existing garage. Materials will be transferred to this area before being transferred through the property to the rear garden.

3.3.3 Delivery materials to the main loading area at eastern boundary of the site may be loaded directly into small dumpers which will use the existing driveway to access the garage storage area. Materials may be stored for a short time before being transferred to the rear of the property.

3.3.4 Adequate allowance must be made for vehicle heights and ground clearance, where tree canopies overhang access routes (e.g.T15). 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.

3.3.5 Many site activities are potentially damaging to trees e.g. material storage, parking, soil compaction and the use of plant machinery. In this latter example particular care is required to ensure that the operational arcs of excavation and lifting machinery, including their loads, do not physically damage trees in use.

3.4 Routing & Installation of Services

3.4.1 It is understood existing services will be used. If additional services are required, every effort should be made to ensure that the routing and instillation of services avoid the RPA at the design stage; however if unavoidable then it may be possible, with written permission from the LPA, to implement

the provisions of BS5837 and NJUG VOLUME 4 (e.g. radial trenching and /or mole trenching) under arboricultural supervision.

3.5 Changes in Grade

3.5.1 The upper layer of top soil contains the majority of a tree's roots and if this is disturbed by a reduction in ground level, serious damage can be caused. If ground levels need to be marginally altered within the RPA of any tree, prior agreement must be sought from the Tree Preservation Officer and given in writing by the LPA. If such soil is to be disturbed within the CEZ / RPA, it will be done only with hand tools and the supervising arborist will be informed if roots are exposed.

3.6 Demolition Measures.

3.6.1 Access facilitation pruning will be undertaken to prevent injurious contact between demolition plant and the tree(s). Any such pruning will be undertaken in accordance with British Standard 3998: Recommendations for tree works (See Section 2.1 / Appendix 1).

3.6.2 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 T9.

3.6.3 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 hard standing, near trees. Where trees stand adjacent to structures scheduled for demolition, it will be necessary to undertake demolition inwards within the footprint of the existing building (often referred to as "top down, pull back").

3.6.4 Throughout all mechanical operations a banksman will be present at all times. Dust generated by the works will be suppressed using water sprays. Sheeted scaffolding will be erected to the western perimeter of the existing main building and the western flank wall demolished by hand to ideally 5m above ground.

3.6.5 Any existing hard standing within the tree's RPA's 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 built structure and hard standing, near trees. Soil exposed beneath the structure will not be scraped away, but preserved in situ and protected immediately (not tracked over) with replacement ground protection (as per para 3.2.1) before the continuance of operations.

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 limits of the basement piling line within the RPA will be manually pre-excavated to a min. 600mm depth and root-pruned (as applicable) under arboricultural supervision

3.7.2 The outline of the proposed building additions and the piling holes will be established by the site engineer with Netlon fencing and trial holes. The arboriculturalist will be consulted on the possible pinch points T9's canopy and the RPAs of T8 and T9. RPA piling encroachments will be pre-emptively excavated by hand or with an Airspade under arboricultural supervision. Roots smaller then 25mm diameter may be cut cleanly with a sharp pruning saw or secateurs back to a junction. Roots larger then 25mm diameter may only be cut in consultation with the retained arboriculturalist. Similarly, the T9 & 15 canopies can only be pruned under the advice of the LT arboriculturalist and strictly in accordance with the Appendix 1 schedule.

3.7.3 Hoardings bordering the frontage of the property along Frognal will help contain any dust. Where required, scaffolding and sheeting can be erected to further contain dust. Water dampening measure will also be used if considered necessary. In the event of dust build up on trees occurring arboricultural advice will be sort and if necessary remedial measures such as hosing down the trees will be taken.

3.7.4 Where scaffolding needs to be installed within the RPA the following ground protection should be followed / adapted to site needs:

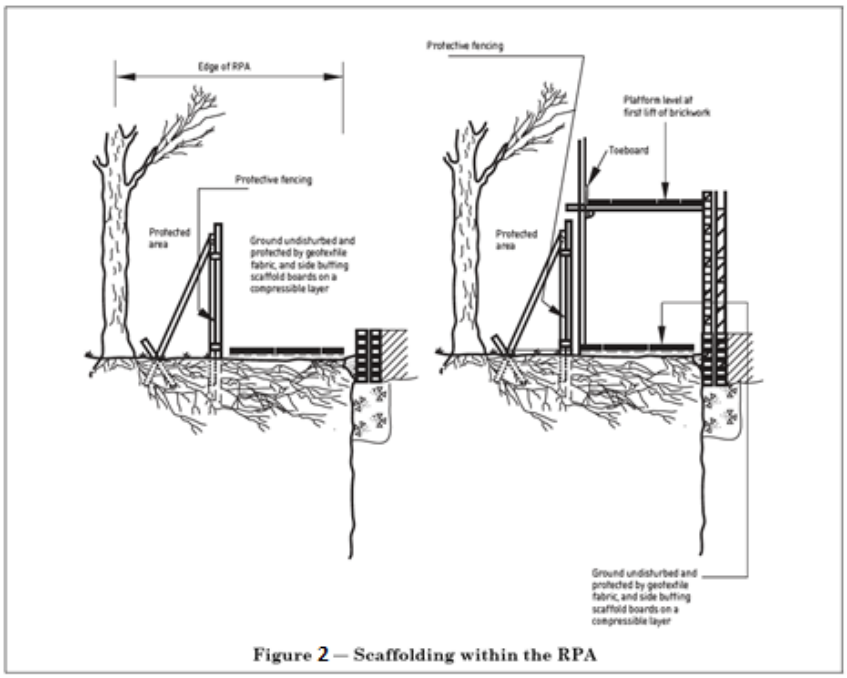


Figure 2 — Scaffolding within the RPA

3.7.5 The replacement paving/hard landscaping will require a no-dig construction technique, either using a cellular confinement system with no fines aggregate for the sub-base, or simply building upon the existing sub-base without disturbing the ground below. Choice of construction method will initially depend upon root penetration within the existing sub-grade. The key principle is not to excavate in the presence of roots and to provide a porous surface to promote healthy soil water relations for future root growth.

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 when all drainage and service runs have been installed and any site machinery has been removed from the RPA.

3.8.2 Following the developing phase, impacted trees within the site boundary, identified for such treatment, will receive remedial soil remediation treatment: deep root fertiliser / mycorrhizal injection and surface mulching

3.8.3 Any further landscaping works should avoid the changing of ground levels or deep digging. Mechanised cultivation such as tractor-mounted rotovation must not be used within the RPA's of existing trees.

3.8.4 Heavy machinery should not be used in the vicinity of any retained trees.

3.8.5 If herbicides are to be used they should be appropriate to their purpose and not in such a way as to damage any retained trees or vegetation; they must be applied by a suitably qualified person i.e. a holder of a recognised 'certificate of competence'.

3.8.6 Ideally, retained trees should be within a shrub area as this reduces the chances of compaction and disturbance of root systems.

3.8.7 Any new planting schemes adopted should consider aspects of the site such as current design, layout and future use. Consideration should also be given to the soil type, climate and overall character of the landscape.

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:

Impact	Mitigation	Reference	Trees Affected
General site access, material storage etc.	Ground protection to acceptable standards.	Sections 2.2 & 3.3 Tree Protection Plan in Appendix 6	All retained trees
Demolition & construction within existing canopy	Tree surgery	Section 2.1	T9 and T15
Demolition of existing build within RPA	Pull down technique within RPA	Section 3.6	T9
Damage to roots caused by building	Manual excavation of piling line to 750mm along basement line	Section 3.7 & 8	T8 and T9

5.0 Completion

5.1 Completion Meeting

5.1.1 Following completion of the works listed above, a Landmark Trees consultant will meet with a local authority representative and agree upon any remedial works deemed necessary. It is the client's duty to notify LT that the project has been completed, in order to facilitate such an inspection.

5.1.2 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 and to monitor the health of some of the more senescent trees on site.

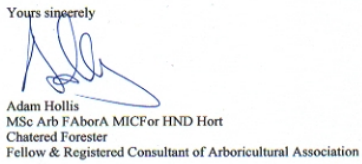
5.1.3 Any works agreed in the above meeting will be confirmed in writing and will be performed to BS 3998: 2010 Tree Works.

5.1.4 Landmark Trees recommend that any work proposed post development is checked to avoid penalty for performing illegal work on a protected tree.

5.1.5 It is recommended that, in due course, acceptance of the recommendations in this report is demonstrated by, for example, the architect specifying in writing to the building contractor that tree care conditions apply in execution of the contract, and by an estimate or written undertaking from the contractor to the architect demonstrating that the practical aspects of observation of such recommendations have been priced in.

5.1.6 If conflicts between any part of a tree and the building(s) arise in the course of development these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly and decline and death of such trees can spoil design aims and can of course affect saleability, and reflect poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

Signed



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Adam Hollis MSc ARB MICFor FArbor A

23rd March 2015

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

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

London Office: 20 Broadwick Street, London, W1F 8HT
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR
Landmark Trees is the trading name of Landmark trees Ltd. Registered in Wales. Reg No. 3882076

Appendix 1: Arboricultural Works

Notes for Guidance:

1, 2, 3 - Urgent (ASAP), Standard (within 6 months), Non-urgent (2-3 years)

RP - Pre-emptive root pruning of foundation encroachments under arboricultural supervision.
CB - Cut Back to boundary/clear from structure.
CL# - Crown Lift to given height in meters.
CT#% - Crown Thinning by identified %.
CCL - Crown Clean (remove deadwood/crossing and hazardous branches and stubs).
CR#% - Crown Reduce by given maximum % (of outermost branch & twig length)
DWD - Remove deadwood.
Fell - Fell to ground level.
FInv - Further Investigation (generally with decay detection equipment).
Pol - Pollard or re-pollard.
Mon - Check / monitor progress of defect(s) at next consultant inspection which should be <18 months in frequented areas and <3 years in areas of more occasional use. Where clients retain their own ground staff, we recommend an annual in- house inspection and where practical, in the aftermath of extreme weather events.
Svr Ivy / Clr Bs - Sever ivy / clear base and re-inspect base / stem for concealed defects.

Landmark Trees

Site: 41 Frognal
Date: 18 03 2015

Surveyor(s): Adam Hollis
Ref: AKN/41F/AMS

Appendix 1

Recommended Tree Works

Hide irrelevant
Show All Trees

Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons
9	Plane, London	B	20	3.0	7/9/7/10	CL5-6m	Pollard (Old) Hint of bottle butt-possible early decay at trunk base; base 125cm from garage To facilitate development
15	Beech, Copper	A	22	0.5	8898	CL4.5m Crown lift over temporary construction access	Entry wounds on trunk Minor deadwood 4/5m clearance over drive To facilitate development
27	Lime, Common	C	20	2.5	3	FInv POL 6m option	Decay at trunk base Advisable for good arboricultural practice
42	Willow, Sallow	C	11	2.0	4533	Fell	Multi stem 4 130,160,210 & 230 To facilitate development

Appendix 2: General Guidelines

2.1 All work must be to BS 3998:2010 - '*Recommendations for tree work'*.

2.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors, and will be covered by adequate public liability insurance.

2.3 Any defects seen by a contractor or the client that were not apparent to the consultant must be brought to the consultant's attention immediately.

2.4 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this method statement are carried out under the supervision of a Landmark Trees consultant.

2.5 It is advisable to have trees inspected by a consultant regularly. On this site it is recommended that these inspections are made every year.

Appendix 3: 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

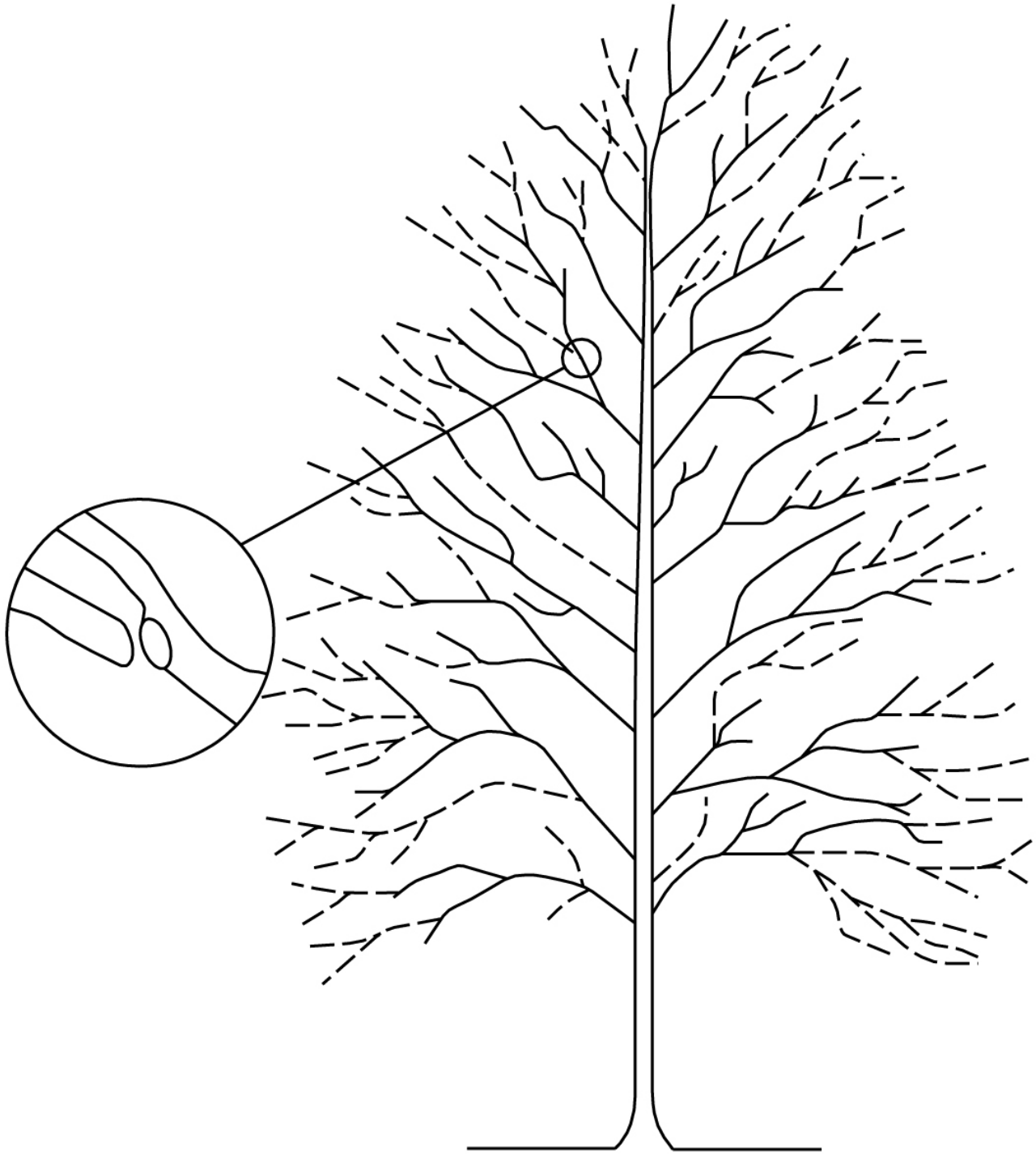
Recommendations

Outcome		
1		
2		
3		
4		

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

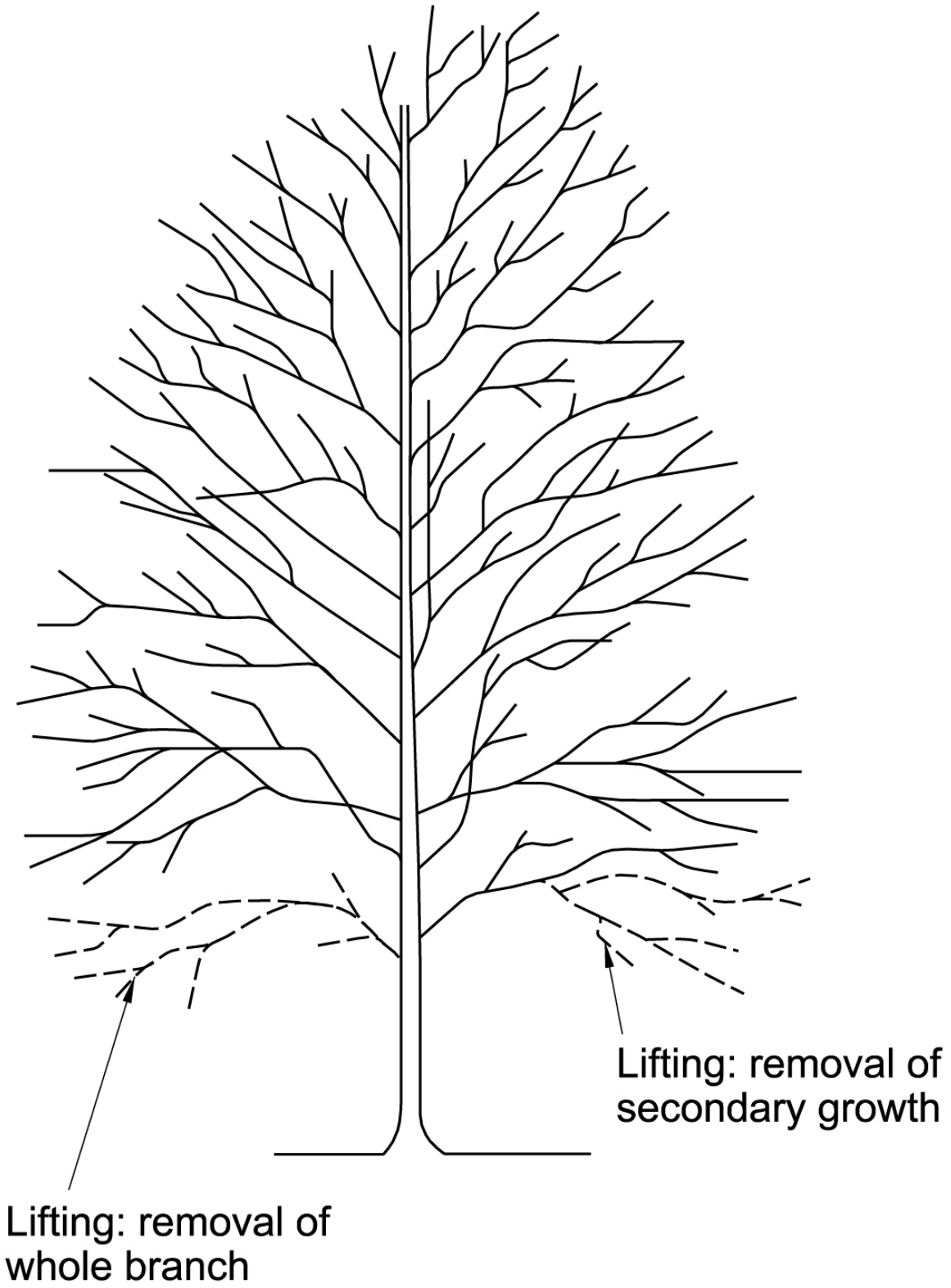
London Office: 20 Broadwick Street, W1F 8HT, London
Registered Office: Grange Cottage, All Cannings, Devizes, Wiltshire, SN10 3NR

Appendix 4: Indicative Pruning Guidelines



NOTE: Branches pruned back to suitable outward pointing bud or small branch.

REDUCING THE CROWN



CROWN LIFTING

Appendix 5: Sample Arboraft Method Statement / Specification

Mr Adam Hollis

Landmark Trees.

Method Statement for the installation of ArborRaft Tree Root Protection System. 18 – 20 Cravenhill Gardens, London.

Introduction

The ArborRaft Tree Root Protection System is a combination of a modular high strength load bearing void former and separation and filter geotextiles. This document should be read in conjunction with the appropriate section drawing for the specified system, to ensure the correct installation is achieved. ArborRaft conforms to the requirements of BS5837 (2012) and APN12.

The system is available in depths of 85mm for occasional vehicular traffic applications and 150mm deep for all vehicles loadings including HGV's and Fire Tenders.

The ArborRaft units are 708mm x 354mm in size and are connected together using ties to create a load bearing structural raft. The units may be built up in layers using shear connectors to join vertical layers together. (see appendix 1)

Applications

- **Footpaths, Bridleways, Bund Construction, Single car drives-----85mm ArborRaft**
- **Car Parks, Access Roads, Service Roads, Working Platforms------150mm ArborRaft**

No Dig System.

The ArborRaft is a no dig Tree Root Protection System, however, some preparation of the existing formation may be required prior to installation such as levelling out the formation with sharp sand to a max depth of 30mm.

System Components

- **ArborRaft Units 708mm x 354mm x 85mm or 150mm deep and ties.**
- **Permatex 300 Separation Geotextile**
- **Surfacing Materials.**

Ground Preparation.

- Remove existing concrete slabs.
- Excavate by hand down to required level.
- Place a maximum 30mm sharp sand bedding layer.
- Lay Permatex 300 Geotextile Separation Fabric.

ArborRaft Tree Root Protection System.

- Place the ArborRaft units side by side and connect using ties provided (See picture in appendix 1) Ensure ArborRaft units span onto the sub base material by a min 500mm on each side.
- Run ArborRaft units up to any roots that appear at the same level as the units. Fill the gap created between the 2 runs of ArborRaft units with clean angular stone 4mm to 20mm. Place granular material up to the top level of the ArborRaft units.
- Span over the granular material and by 1mt over each side of the ArborRaft units with a Triax 170 Geogrid.
- Place second layer of Permatex 300 Geotextile over the whole area of the installation.

Surfacing Details.

- Place bedding materials and concrete blocks as per manufacturers instructions.

Appendix 1

Rolling Out The Geotextile

Laying Out The Arbor Raft

Installing Arbor Raft Two Units High

Section Of Arbor Raft Complete With Geotextile

Appendix 6: Tree Protection Plan

3 Plum C2
1 Plane A1
5 Sycamore B1
4 Plum C2
2 Chestnut
2a Holly
6 Plum C2
7 Ash C2
8 Plane B1
15 Beech A1
9 Plane B1
10 Chestnut B1&2
12 Holly C2
13 False Acacia C2
Proposed Storage Area
41 Sycamore B1
14 Maple C/b1
38 Beech B1
39 Yew C1
35 Lime B1
40 Cherry C1
37 Lime B2
36 Lime B2
19 Oak C1
21 Elder C2
22 Elder C2
34 Yew C1
31 Lime C1
30 Ash C1
29 Lime C2
28 Chestnut B1
27 Lime C1
26 Beech A1
24 Pyracantha C1
23 Elder C1
25 Chestnut C1

5m 10m

N

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).

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Site: 41 Frognal	1:200 @ A1
Drawing Title: Tree Protection Plan	Jan 2015

Key:

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

Category, Crown Spread, Root Protection Area, 13 Birch B2, Tree Number, Species, Category

- Tree Position Approximate (not shown on original survey)
- Precautionary area: assumed no-dig construction. All excavation subject to arboricultural supervision; limits of which to be hand-dug; hard-surfacing retained as ground protection where practicable
- Tree Protection Fencing
- Temporary Ground Guards for Construction Access