

Landmark Trees

ARBORICULTURAL METHOD STATEMENT

Land at 22 Froggnal Way
London
NW3 5EX

REPORT PREPARED FOR:

KSR Architects LLP
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London
NW1 0ND

REPORT PREPARED BY:

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Ref: KSR/22FW/AMS/01c

Date: 5th September 2017

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Contents

1.0	INTRODUCTION	3
2.0	PRE-DEVELOPMENT SITE PREPARATION	8
3.0	DEVELOPMENT PHASE	10
4.0	SUMMARY OF PROPOSED METHODS	13
5.0	COMPLETION	13

Appendices

APPENDIX 1	Tree Works	15
APPENDIX 2	General Guidelines	17
APPENDIX 3	Sample Site Supervision Sheet and Arboricultural Supervision Sign off Checklist	18
APPENDIX 4	Tree Protection Plan	21

1.0 Introduction

1.1 Purpose & Use of the Method Statement

- 1.1.1 This outline method statement has been prepared for KSR Architects, for assistance with the discharge of planning conditions at Land at 22 Frognal Way, London NW3 5EX: Planning Inspectorate appeal decision APP/X5210/W/16/3150327 of the London Borough of Camden planning application no.: 2015/3530/P. The document will address the following condition:

6) Details of the design of building foundations and the layout, with dimensions and levels, of service trenches and other excavations on site in so far as these items may affect trees on or adjoining the site, shall be submitted to and approved in writing by the local planning authority before any works on site are commenced. The relevant part of the works shall not be carried out otherwise than in accordance with the details thus approved.

- 1.1.2 This document lays down the methodology for any proposed works that may have an effect upon the trees on and adjoining 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.

1.2 Terms of Reference

- 1.2.1 We (LT) are instructed by the client, 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 client has supplied us with a site lay-out plan (15529 A1 (LAND SURVEY)), the current proposals plan (P-090 - LIVING LEVEL PLAN). Engineers Price & Myers have also supplied us with copies of the piling plans (23261 series). The main contractor, My Construction have provided us with a draft copy of their Construction Management Plan. We are also reliant upon our own impact assessment report KSR/22FW/AIA/01 and plan overlays of tree constraints contained therein.

1.3 Development Proposals

- 1.3.1 The principal proposals are for the demolition of existing dwelling and construction of a new family dwelling which includes a basement level.

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 building & landscaping
- 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

1.5.1 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 noted in the minutes to / report for this meeting (and issued to the London Borough of Camden). During this meeting, all the tree protection methods below will be studied and familiarization undertaken with the 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
Arboricultural Consultant
 Landmark Trees
 info@landmarktrees.co.uk

Tel: 0207 851 4544

Site Manager
TBC

1.6 Supervision Schedule & Contingency Protocol

- 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 other suitably qualified and experienced arboriculturalists 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 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 current contact details of the LPA Tree Officer are:
- Nick Bell
Arboricultural Officer
 LB Camden
 nick.bell@camden.gov.uk
- Tel: 0207 974 4444
- 1.6.5 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.
- 1.6.6 Supervision will require the arboriculturalist to be present throughout all such designated operations (works within the RPA) to ensure tasks are carried out as per the approved methodology, and to ensure the arboricultural objectives were met.
- 1.6.7 The Local Authority will be accorded free access to the site for tree-related matters subject to H&S requirements; as noted at 1.6.3, any problems will be reported directly to the 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 the London Borough of Camden 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.

- 1.6.8 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 the London Borough of Camden 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 London Borough of Camden.

Table 1: Site Monitoring Visits

Supervision Visit No:	Details	Action
Visit 1: Pre-Development Site Inspection (S.2.3 of AMS)	<ul style="list-style-type: none"> To include construction Site Agent briefing (S.1.5). To confirm position of protective measures and that they have been erected in accordance with AMS (S.2.2 & 3 and Tree Protection Plan in Appendix 5); To check any tree works have been undertaken in accordance with this AMS (S.2.1. and Appendix 1). Determine if further tree work is required and seek required permission if necessary. To check site facilities/access are in accordance with the AMS (S.3.3). 	Issue a brief report with findings to Architect and Main Contractor within 5 days of site supervision visit (Site Monitoring Sheet in Appendix 3).
Visit 2: Installation of any new services within RPA (S3.4) subject to consent for works	<ul style="list-style-type: none"> Attend any excavation within RPA's where arboricultural supervision is prescribed by the AMS to ensure work is undertaken in accordance with NJUG provisions or other specification. Date to be confirmed following formal project planning. 2 weeks prior notice required. 	Issue a brief report with findings to Architect and Main Contractor within 5 days of site supervision visit (Site Monitoring Sheet in Appendix 3).
Visit 3: Arboricultural supervision of construction within RPA	<ul style="list-style-type: none"> Confirm position of any additional temporary ground protection and that temporary ground protection is in accordance with AMS. Attend any excavation within RPAs where arboricultural supervision is prescribed by the AMS and any other unplanned incursions into the protection areas (subject to Local Authority agreement as noted above). 2 weeks prior notice required. 	Issue a brief report with findings to Architect and Main Contractor within 5 days of site supervision visit (Site Monitoring Sheet in Appendix 3).
Ongoing Monitoring Visits	<ul style="list-style-type: none"> Periodically during 12 months (or longer) of entire project. Visits will be based on intensity of site operations, but at a minimum of 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. 	Issue a brief report with findings to and Main Contractor within 5 days of site supervision visit. (Site Monitoring Sheet in Appendix 3).
Final Site Visit - Completion of construction phase supervision visit (S.5)	After it has been confirmed that the landscape phase is complete. Specify any remedial work if necessary.	Issue a brief report with findings to Architect and Main Contractor within 5 days of site supervision visit. (Site Monitoring Sheet in Appendix 3). Provide signed arboricultural checklist (see Appendix 3)

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 including BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations.
- 2.1.2 Specific works recommended to facilitate development are the felling of T6 and G24 and the cutting back of T1 by approximately 2m. These works, along with those recommended for sound husbandry, are listed in Appendix 1.

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') will be erected to protect 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). The TPB should carry waterproof warning notices denying access within the RPA.
- 2.2.3 This TPB is to be erected before any work (other than tree surgery) 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. It should be maintained to ensure that they remain rigid and complete. Where minor work is deemed necessary prior to the erection of fencing a Landmark Trees representative should be forewarned to enable their presence to oversee the work being carried out.
- 2.2.4 The location of the TPB is shown in the Tree Protection Plan at Appendix 5; it is partly installed already from the previous application.

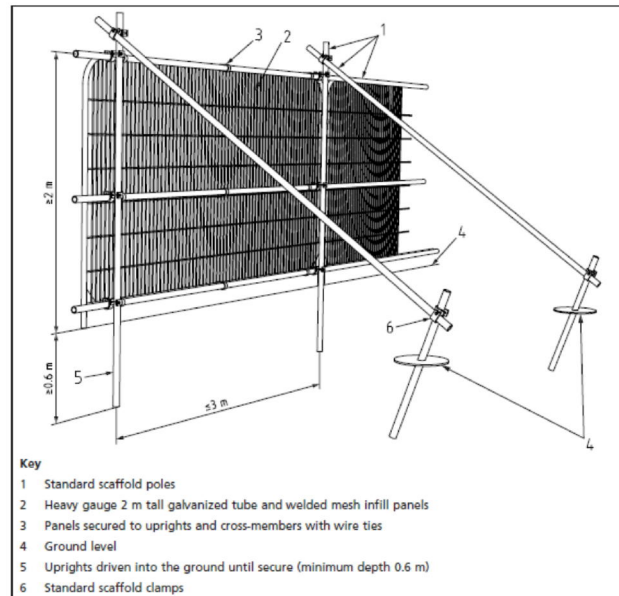


Fig. 1 Tree Protection Barrier Specification
(Source: Figure 2 from BS5837 - Default specification for protective barrier)

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 of the ground protection is shown in the Tree Protection Plan at Appendix 5.
- 2.3.2 In order to provide this ground protection, Ground Guard MultiTrack mats are to be installed. These lightweight mats are capable of supporting a load of up to 120 tonnes and are to be secured in place using their integral fasteners.

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: it is necessary to perform some works (in part) within the RPA i.e. formation of basement level and landscape remodelling.

3.2.2 All involved parties will need to be made aware of this need for operations within RPAs; in these instances, careful and supervised working, as described in sections, S. 3.6 (construction) and S. 3.7 (landscaping) will be required.

3.3 Site Access, Accommodation & Storage

3.3.1 Site access and accommodation will be as per the layout within our Tree Protection Plan (App. 5), making use of an area well away from retained trees.

3.3.2 Pedestrian access will run parallel, but separate to vehicular access.

3.3.3 Delivery lorries will be excluded from RPA's by tree protection fencing. Adequate allowance must be made for vehicle heights and ground clearance, where tree canopies overhang access routes. Any further pruning for working clearances must be discussed first with the arboriculturist; once agreed in principle these works should be approved by the appropriate tree officer and approved in writing by the LPA. Materials can be unloaded and stored throughout the interior of the site away from protected trees.

3.3.4 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 We have not at this time been supplied by the applicant with full service details, although understand existing services will be used if possible. These matters will need to be resolved separately by variation of condition. This cannot be resolved herein as a generic item.

3.5 Demolition Measures

- 3.5.1 All plant and vehicles engaged in demolition works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure. The demolition of the building should proceed inwards in a "pull down" fashion.
- 3.5.2 If the weather is "dry," the site will be watered down to reduce dust travelling to adjacent properties. Where levels of dust build-up on trees occur, it may be necessary to seek the advice of Landmark Trees on remedial measures, e.g. hose down the tree(s) immediately following any significant accumulation of dust.
- 3.5.3 All spoil is to be loaded into trucks reversing into site from the road. Trucks to be fitted with loading grabs.

3.6 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.

- 3.6.1 The path of the basement foundations and associated secant piling through the RPAs of T1 and T2 will be manually excavated to 750mm depth under arboricultural supervision; any roots encountered within the trenches / pits will be cleanly pruned back to an appropriate junction with a sharp pruning saw or secateurs back to a junction. **Roots larger than 25mm diameter may only be cut in consultation with an arboriculturalist.**
- 3.6.2 During the construction phase and throughout dry periods on site regular hosing down will be carried out to control dust pollution. In the event of dust build up on trees occurring arboricultural advice will be sought and if necessary remedial measures such as hosing down the trees will be taken.

3.7 Removal of Ground Protection & Post Construction Landscaping & Treatment

- 3.7.1 The tree protection barrier may be removed upon completion of the construction phase and when all drainage and service runs have been installed and all plant has been removed from the site.

- 3.7.2 The limits of excavation for the landscape remodelling within the RPAs of T7, T8, T9 and T10 will be undertaken manually; any roots encountered will be cleanly pruned back to an appropriate junction with a sharp pruning saw or secateurs back to a junction. **Roots larger than 25mm diameter may only be cut in consultation with an arboriculturalist.**
- 3.7.3 All further 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 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 4	All retained trees
Damage to roots caused by basement foundation excavation within RPA.	Manual excavation of top 750mm of basement line through RPA with pre-emptive root pruning.	Section 3.6	T1 & T2
Landscape remodelling within RPA	Manual excavation with pre-emptive root pruning.	Section 3.7	T7, T8, T9 & T10

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.

Signed

Yours sincerely

Adam Hollis
 MSc Arb MRICS FARborA MICFor C ENV
 Registered Consultant
 Chartered Surveyor, Forester & Environmentalist

.....
 Adam Hollis MSc ARB MICFor FARbor A

4th September 2017For and on behalf of **Landmark Trees**

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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.
- Flnv - 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.

*Not generally specified following BS3998:2010

Site: 22 Frogmal Way
 Date: 12 May 2014

Appendix 2 Recommended Tree Works

Surveyor(s): Adam Hollis
 Ref: KSR/22FRG/AIA



Tree No.	English Name	Height	Stem Diameter	Crown Spread	Recommended Works	Comments/ Reasons
1	Lime, Common	25	1000	10,7,5 ,6	CB 2m Cut back to 1m inside TPB	Die-back (minor), major storm damage, 30mm Included bark in main stem unions Acute forks from 5m; cracked NE limb union: partially failed lower limb pruned 2014. Recommended to permit development
6	Elm	11	200	1341	Fell	Remote survey only; susceptible to DED Recommended to permit development
G24	Willow	7	100	1	Fell	Recommended to permit 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 AND
ARBORICULTURAL SUPERVISION SIGN OFF CHECKLIST**



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			

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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			

Arboricultural Method Statement: Land at 22 Froggnal Way, London NW3 5EX

Prepared for: KSR Architects LLP, 14 Greenland Street, London NW1 0ND

Prepared by: Adam Hollis of Landmark Trees, Holden House, 4th Floor, 57 Rathbone Place, London W1T 4JU

APPENDIX 4: TREE PROTECTION PLAN

[illegible]