

ARBORICULTURAL METHOD STATEMENT

9 St-Martins Almshouses **Bayham Street** London NW1 0BD

REPORT PREPARED FOR:

Christian and Emma Knutson 9 St-Martins Almshouses **Bayham Street** London NW1 0BD

REPORT PREPARED BY:

Adam Hollis MSc ARB MICFor FArbor A MRICS C Env

> Ref: MOX/9STM/AMS/01b Date: 18th June 2018

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1.0 Introduction

1.1 Purpose & Use of the Method Statement

1.1.1 This method statement has been prepared for Christian and Emma Knutson, for assistance with the discharge of planning conditions at 9 St-Martins Almshouses, Bayham Street, London NW1 0BD: London Borough of Camden planning permission no.: 2017/4287/P. The document will address the following condition:

5 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 Council in writing. Such details shall follow guidelines and standards set out in BS5837:2012 "Trees in Relation to Construction" and should include details of appropriate working processes in the vicinity of trees, and details of an auditable system of site monitoring. 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 Development Framework Core Strategy.

- 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 clients, Christian and Emma Knutson, 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 (MOX-599_001-Sheet 599_101 Existing Site Plan) and the consented drawings (floor plans, structural drawings etc.) as found on the council's website. We are also reliant upon our own impact assessment report MOX/9STM/AIA/01 and plan overlays of tree constraints contained therein.

Arboricultural Method Statement: 9 St-Martins Almshouses, Bayham Street, London NW1 0BD Instructing party: Christian and Emma Knutson, 9 St-Martins Almshouses, Bayham Street, London NW1 0BD Prepared by: Adam Hollis of Landmark Trees, Holden House, 4th Floor, 57 Rathbone Place, London W1T 4JU

- 1.3 Development Proposals & Potential Impacts
 - 1.3.1 The principal proposals are for: *Demolition of existing rear extension and replacement with new single storey rear ground floor extension; new basement beneath the proposed rear extension including external light well; excavation of existing basement beneath house by additional 800mm; new conservation roof light at roof level; restoration and refurbishment works throughout original dwelling house (class C3).*

1.4 Sequence of Works

- 1.4.1 The sequence of works will be as follows:
 - initial tree husbandry works
 - installation of Tree Protection Barrier (TPB) & ground protection
 - demolition of existing extension & landscaping
 - installation of underground services
 - main construction
 - removal of TPB
 - hard landscaping
 - 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 the London Borough of 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 Arboricultural Consultant Landmark Trees info@landmarktrees.co.uk Tel: 0207 851 4544

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 James Bell Tech Cert. (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:

James Remmington **Planning Arb Officer** London Borough of Camden james.remmington@camden.gov.uk Tel: 0207 974 4444

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- 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 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.
- 1.6.7 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 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	Lead in Time Required by LT	Action
Visit 1: Pre-Development Site Inspection (S.2.3 of AMS) <u>To be repeated prior</u> <u>to Construction Phase</u>	 To include Site Agent briefings (S.1.5) prior to both demo <u>AND</u> 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 4); To check any pre-demolition/construction ground protection is in place. 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). 	Minimum 2 weeks	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: 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. 2 weeks prior notice required. 	Minimum 2 weeks	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: Installation of piling 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. 2 weeks prior notice required. 	Minimum 2 weeks	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	 Periodically during 12 months (or longer) of entire project and <u>prior to construction phase</u>. Visits will be based on intensity of site operations, but at a minimum of monthly visits. Attend site at least once per month 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. <u>Pre-start landscape meeting</u> with main contractor to confirm ongoing tree protection measures. 	TBC as project develops	Issue a brief report with findings to Architect 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 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 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 No works are necessary to facilitate the development although there are husbandry works recommended. These specific works 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 Given the presence of existing hard standing, below ground scaffolding support for the barrier may be inappropriate here. Securing the welded mesh panels on rubber or concrete feet should provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. The fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins or on a block tray (Figure 1 below)...

- 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 4.

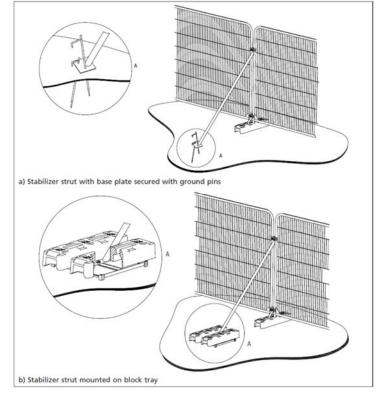


Fig. 1 Above ground- stabilizing system (Source: Figure 3 from BS5837 – Examples of above ground stabilizing system

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 4. 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 The existing hard standing in to the front of the property will act as ground protection to G4. T1 & T2 will be protected by existing hard standing in the rear garden along with a 100mm mulch layer topped with plyboards or similar on shrub beds.

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: the demolition of the existing extension, construction of the basement level and replacement extension and the replacement of hard surfaces will take place within the RPA of retained trees.
 - 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), S. 3.7 (construction) and S. 3.8 (landscaping) will be required.

3.3 Site Access, Accommodation & Storage

- 3.3.1 Site access will made from Bayham Street. Site accommodation and material storage will utilise protected ground within the site interior / rear garden.
- 3.3.2 Delivery lorries will be excluded from RPA's by hoarding and ground protection. 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 arboriculturalist; 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 onto protected ground (forecourt) within RPA's and stored throughout the interior of the site(s) away from protected trees.

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. If not, these matters will need to be resolved separately by variation of condition. This cannot be resolved herein as a generic item.

3.5 Changes in Grade

3.5.1 No changes in level are proposed beyond the basement excavation itself, and any direct effect of employing a no-dig construction technique for the replacement hard landscaping.

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 the removal of the existing extension and hard landscape / surfacing removal for the alterations of the existing drive within the RPA of T's 1 & 2. Aside from areas within the piling limits, all hard structures within RPA will be retained until the landscape phase (and then broken out as per 3.6.8 below).
- 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, 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").
- 3.6.3 Should 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.
- 3.6.4 The existing hard standing within the RPA of T's 1 & 2, removal of which is necessary for the construction of the basement and extension 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 limits of the basement piling line within RPAs will be manually pre-excavated to a min. 1m depth and root-pruned (as applicable) under arboricultural supervision. In the unlikely event of discovering roots >25mm diameter, they should only be cut under arboricultural supervision.
- 3.7.2 Spoil from the excavation of the basement level will be transported in tonne bags by forklift to a flatbed truck positioned adjacent to the site's access from Bayham Street.
- 3.7.3 Concrete will be either pumped to site from a mixer truck at the Bayham Street entrance or transferred to site in a hopper. Other materials shall be delivered on pallets which will be transported to site using a forklift truck.
- 3.7.4 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 sort and if necessary remedial measures such as hosing down the trees will be taken.
- 3.7.5 Where scaffolding needs to be installed within the RPA the existing hard standing at rear and front and 100mm mulch and board on shrub beds at front will provide sufficient ground protection.

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 replacement paving/hard landscaping within the rear garden installed on top of the existing sub-base with minor augmentation as necessary. Where the existing sub-base is to have a new surface laid upon it, it is imperative no excavation or compaction beyond this sub-base occurs.
- 3.8.3 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:

Impact	<u>Mitigation</u>	<u>Reference</u>	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	
Demolition of existing structures within RPA	Pull back technique within RPA	Section 3.6	T1 & 2	
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	T1 & 2	

Table 2: Summary of Proposed Methods

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.



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Adam Hollis MSc ARB MICFor FArbor A

20th April 2018

For and on behalf of Landmark Trees



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APPENDIX 1: ARBORICULTURAL WORKS

<u>Notes f</u>	for Guidance:
1, 2, 3 RP CB CL# CCL# CCL CR#% DWD Fell Flnv	 Pre-emptive root pruning of foundation encroachments under arboricultural supervision. Cut Back to boundary/clear from structure. Crown Lift to given height in meters. Crown Thinning by identified %. Crown Clean (remove deadwood/crossing and hazardous branches and stubs).*
Pol Mon	- Pollard or re-pollard. - Check / monitor progress of defect(s) at next consultant inspection which should be <18
IVIUIT	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

Landmar	Site: 9 St Date: 04/0 rk Trees	Martins 14/2017		R		ppendix 1 ended Tree Works	Surveyor(s): Ref:	Adam Hollis MXN/9STM/AIA	Hide irrelevant Show All Trees
Tree No.	English Name	B.S. Cat	Height	Ground Clearance	Crown Spread	Recommended Works	Comments/ Reasons		
1	Plum	U	4	2.5	5015	Fell	Honey fungus or Leaning significa Recommended h	antly NW	omewhat sparser than

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



Site Monitoring Report Sheet

Client:				Planning Ref:	
Local Authority:				Date:	
Site Address:					
Proposal:					
Visit Checklist		Y/N			Y/N
Tree protection barrier place	(TPB) in		TPE	3 as per approved	
Ground protection (GF) in place			as per approved	
TPB / GP breached			Tre	es damaged	
Site Agent briefed by L					
LT briefed by Site Agen	†				
LPA informed	l				
Remedial action requir Comments	ed				
Comments					
Recommendations					
Outcome					
1					
2					
3					
4					

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Registered Consultant

Tree	Project Phase	Task	Date	Signed (Project arboriculturist)	Signed		
No (s)			Completed	arbonculturist)	(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 Supervision Sign off Checklist

APPENDIX 4: TREE PROTECTION PLAN

