22nd May 2014

Ref:ha/ms1/6antrimgrv

Your Ref:

Mr J Biek Bchitecture 11a Beresford Road London N2 8AT

Dear Mr Biek

Tree Protection and Management in relation to Construction at: 6 Antrim Grove, London

Further to instructions, please find my arboricultural report and method statement attached to assist with the planning application.

I hope that this is clear and helpful but if I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely

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Hal Appleyard Dip. Arb. (RFS), F.Arbor.A, MICFor. *Arboricultural Association Registered Consultant*



Registered Consultant

enc.

cc Client





Arboricultural Assessment and Protection Method Statement

Site: 6 Antrim Grove, Belsize Park, London

Date: 22nd May 2014

Prepared by: H. Appleyard Dip.Arb (RFS), F.Arbor. A, MICFor

Ref: ha/ms1/6antrimgrv

Appendices:

- 1. Tree Survey Schedule (BS5837:2012)
- 2. Tree Protection Plan TPP1_6AG
- 3. Recommended tree protection fencing
- 4. Example of site monitoring record

1.0 Introduction and Scope

- 1.1 A planning application for the construction of a new basement extension is to be submitted for approval by the Local Planning Authority.
- 1.2 The proposed construction is to be undertaken in the vicinity of an off-site tree within a conservation area. The implications upon the tree and the methods for tree protection and preservation during construction work are set out in this report and which includes a requisite a tree protection plan.
- 1.3 I have been appointed on behalf of the site owners as a competent and qualified arboricultural consultant to provide this report and to supervise any works that may have the potential to affect the protected and retained trees.
- 1.4 The trees have been inspected and assessed on 27th November 2013. The details of the tree relevant stock are provided accordance with the guidance set out in BS 5837:2012 'Trees in relation to design, demolition and construction-Recommendations' (the BS) and an extract from that guidance is appended herewith.



2.0 The Site and Trees

2.1 The site comprises a two storey dwelling with front and rear garden space. The rear garden rises up from the rear patio area adjacent to the rear, west-facing elevation. The rear garden is mostly grass and trees exist only in neighbouring land to the west and north.



Fig. 1 View looking west. Off-site Sycamore T1 and small magnolia (arrowed)

- 2.2 The BS details of the trees are provided within the tree survey schedule at Appendix 1 and their corresponding positions are shown on the tree protection plan at included at Appendix 2.
- 2.3 The only tree of any consequence to the proposed construction work is an off-site, mature Sycamore. The twin-stemmed tree has suffered recent damaged resulting from storms and adjacent falling trees. As a result the tree is in poor condition and form, which is now very one-sided and sparse. The tree possesses a canopy, which presents low resistance to wind forces but owing to the damage and form it also possesses low visual amenity.
- 2.4 It is likely that roots from the tree have encroached into the site but which also will grow unimpeded by structures in most directions. Consequently, the extent of



rooting offering support the tree and which grows within the rear garden of No 6 Antrim Grove, is proportionately low.

2.5 With reference to the literature^{1,2} Sycamore species shows tolerance to root disturbance and pruning. Given the low proportion of roots likely to encroach into the site, some root loss is unlikely to have any effect upon the tree's anchorage or condition.

1. Matheny. N, Clark. J. R, 1998. 'Trees and development; A technical guide to the preservation of trees during land development'. ISA

2. Costello, L.R, Jones. K. S, 2003. '*Reducing infrastructure damage by roots: A compendium of strategies.*' ISA Western Chapter.

3. Roberts. J, Jackson. N, Smith. M, 2006. 'Tree roots in the built environment.' TSO DCLG

4. Lindsey, P. Bassuk, N. 1991 'Specifying soil volumes to meet the water needs of mature urban street trees and trees in containers'. Journal of Arboriculture vol. 17 No 6.

Proposed Construction and associated works

- 2.5 The proposal involves the excavation of soil and associated piling work within the likely rooting area of the Sycamore T1. I recommend that the initial excavations to a depth of 1000mm are to be undertaken manually and under the watching brief of a qualified arboriculturist, who can advise upon root treatment where this is necessary. I have shown upon the tree protection plan, the location of a precautionary dig (hatched).
- 2.6 The preliminary details of the methods for tree protection are set out in the report and subject to their proper implementation, I am confident that the trees of landscape importance can be effectively protected for the future.

Tree Works (Spec.)	Tree Nos	Visual Landscape Impact of Works*	Available Replacement Planting(Y/N)	Comments
Root exposure and treatment as necessary (SP8)	T1	None	-	Supervised manual dig and root pruning where necessary
Total		None		

Table 1 Proposed Tree Works

*This is a preliminary visual appraisal based upon the opinion of the author having inspected the trees in the context of their current surroundings. – None (no change or beneficial impact) Negligible or indiscernible difference to treed landscape; Low – Noticeable but mitigated by retention of other landscape trees and features; Medium – Obvious but temporary alteration to the treed landscape; High – Obvious and permanent alteration to the landscape.



Visual receptors include the public or community at large, residents, visitors or other groups of viewers together with the visual amenity of potentially affected people.

Specifications for recommended tree works:

General

All work is to conform to BS 3998:2010 'Tree work – Recommendations' and with current arboricultural best practice. Tree works are to be undertaken by a professional and specialist arboricultural contractor, who carries the appropriate experience and insurance cover, equipment and PPE. All works and processes are to comply with all relevant Planning Wildlife, Environmental, Conservation and Health and Safety legislation.

Sp8. Root pruning is to be carried out or supervised by a competent person (arboricultural contractor). Only sharp and specific pruning tools will be used for the root pruning exercise. No roots are to be pruned if it is considered that their loss (or shortening) will adversely impact upon tree condition or anchorage, immediately or in the future. Any exposed roots will be covered with a material to prevent desiccation. All exposed cut root surfaces will be made as small as possible. If possible roots will be pruned back to side shoot.

Tree Ident.	Landscape Contribution	Implications/Impact	Mitigation measures	Impact Assessment**
T1	Low	Construction and excavations within rooting area	 Erect tree protection fencing Manual excavations and root treatment under specialist supervision 	Neutral

Table 2 Summary of Implications of Construction on Trees*

* Main trees selected for comment included above. Refer to previous notes on other trees. ** Negative – adverse impact upon trees and landscape; Neutral – no material impact (negative or positive); Positive – improvement (potential) to tree quality and landscape



3.0 Recommended Construction Precautions (trees)

- 3.1 In order to afford protection from general construction processes associated with the building of the new basement area, it will be necessary to erect a robust tree protection fence (normally wire mesh panels) in the position indicated on the Tree Protection Plan at **Appendix 2** (TPP1_6AG). A recommended example of the type BS grade tree protection fencing is included at **Appendix 3**.
- 3.2 In order to reduce damage to roots encroaching into the site, I have set out a method for preliminary dig to a point below the rooting line (normally 1000mm depth)

Preliminary trial pit work and rooting area treatment.

- i) First mark out the area to be manually excavated with marker spray paint
- ii) Using hand tools remove the existing surfaces e.g. paving, turf
- iii) Using the hand tools and compressed air (Air Spade) if necessary, remove the soil from the trial trench to a depth of min. 1000mm. The width of the pit should be sufficient to for one person work in safely. All roots over 20mm diameter should be retained for inspection.
- iv) Place the spoil beyond the RPA of the tree in question.
- Arboricultural supervisor will inspect the roots/soil and advise upon root pruning. Any root pruning will carried out using sharp and specialised pruning tools (not spades or mattocks).
- vi) The exposed face of the trench (tree side) is to be covered with a sacking-type material, which can be dampened with water and fixed in position with small stakes or weighted down along the upper ridge of the trial trench.
- vii) The tree in question is to be monitored for condition and any changes are to be noted and acted upon where appropriate.

NOTE: THE APPOINTED ARBORICULTURAL SUPERVISOR IS TO BE CONSULTED BEFORE ANY WORK, EITHER SCHEDULED OR UNSCHEDULED, IS UNDERTAKEN WITHIN THE EXCLUSION ZONE OR ROOT PROTECTION AREAS OF ANY RETAINED TREE. FAILURE TO DO SO MAY LEAD TO ENFORCEMENT ACTION.

- 3.3 In order to ensure that the tree protection measures are implemented effectively, a site monitoring exercise will be undertaken to confirm:
 - i) The efficacy and accuracy of the fencing and ground protection
 - ii) The root assessment process



An example of a site record (tree protection) is provided at **Appendix 4**. In this case, the form will be used as confirmation that all practical precautions have been undertaken in accordance with this method statement.

- 3.4 A copy of this method statement is to be retained on site for the duration of the build process together with a scaled, colour copy of the Tree Protection Plan.
- 3.5 Key times for site supervision include:
 - 1. Completion of agreed/necessary tree works
 - 2. Erection of tree protection fencing
 - 3. Installation of ground protection
 - 4. Works within RPAs of retained trees
 - 5. Landscaping
- 3.6 Effective site monitoring will be undertaken from the outset of the project and at agreed intervals thereafter. The frequency of monitoring may well decrease following the proper installation of all tree protection measures. Below is a recommended programme of arboricultural supervision. (This programme may alter dependent upon site circumstances or by agreement.)

Stage	Action	Arboricultural Supervisor (AS) (Required – Y/N)	Notes
1	Pre-commencement meeting	Y	Site Agent(SA) and demolition contractor to attend
2	Installation of tree protection fencing	Y	PRIOR to any ground works
3	Preliminary manual excavations and root treatment	Y	SA to advise AS prior to commencement
4	Construction phase	Y	AS to monitor tree protection at agreed intervals and timings
5	Remove tree protection fencing	Ν	SA to advise when complete; AS to sign off

Table 3 Preliminary site supervision schedule

Contact List (to be completed **PRIOR** to commencement)

Interested Party	Name	Company/LPA	Contact Number(s)	Comment
Site Agent				ТВА
Main Contractor				ТВА
Arb. Supervisor	Hal Appleyard	ACS Consulting	020 8687 1214	Arb. Consultant
LPA Tree	Mr T Littlo	Camdon Council	020 7074 5020	
Officer		Camuen Council	020 7974 5959	
Architects	J Biek	Bchitecture	020 730741002	

TBA – to be advised



4.0 **Precautions during Landscape Work**

- 4.1 The following steps (both general and site specific), are advisable in relation to implementing any landscape works, which may have the potential to affect retained and or protected trees:
- 1. Advise arboricultural supervisor of intended time frame of landscape work in advance of commencement.
- 2. Re-locate existing tree protection fencing/ground protection to enable landscape work to proceed.
- 3. With bio-degradable spray paint or site pins with plastic tape, mark out the position of the relevant tree root protection areas (RPA) as per the tree protection plan.
- 4. Within the RPAs, avoid using any mechanical tools or vehicles (e.g. tracked or wheeled machinery).
- 5. Spread any mulch or top soil manually, with the use of wheel barrows and hand tools. It will be acceptable to use of the back actor of a tracked excavator to spread piled top soil or mulch into the RPAs of protected trees provided the bucket does not come in contact with the ground and that the power unit is positioned outside of the RPAs at all times.
- 6. Any planting pits are to be excavated manually within the RPAs of any retained trees.
- 7. Multiple passes within the RPAs along one route, pedestrian and with wheel barrows will require some ground protection to be installed prior to working. Ground protection can be scaffold boards over wood chip for example.
- 8. A record of the landscape working method is to be made and provided to the Council for their file.
- 9. Hard landscaping features will be constructed under supervision within the RPA of retained trees and will avoid, where possible, the re-grading of soil.

5.0 General site care (trees)

- 5.1 No fires will be lit on site.
- 5.2 No access will be permitted to within the fenced or otherwise protected areas (unless for site accommodation or Authorised agreement) at any stage during construction.
- 5.3 No materials, equipment or debris will be stored within the fenced areas unless agreed with the arboricultural supervisor.
- 5.4 Areas for mixing are to be located beyond RPAs of trees and contained to prevent leaching into the soil.
- 5.5 A copy of this report and the Tree Protection Plan is to remain on site at all times.



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Please note that all relevant planning approvals and approval to planning conditions must first have been issued by the relevant planning authority in order for this report to become effective. We strongly advise that you consult your planning advisors <u>before implementing any recommendations</u> set out in this report.

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Hal Appleyard Date:22nd May 2014

Tel: 0	20 8687 1214					110		vcy							C	ONSULTING
Site:	6 Antrim Grove, Belsize	e Park												5	Surveyor:H. Appleyard	
Date:	27th November 2013													F	Ref:ts1/6ag	
Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations	
T1	Sycamore	16	3 5 3 5	3/S2	Mature	800	12	9.6	Moderate	Fair	Low	С	1,2	20-40	Off-site tree Storm damage and poor form	

Trop Survey Schedule

Notes:

ACS Consulting (London)

- 1. Height describes the approximate height of the tree in meters from ground level.
- 2. The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, E, S, W) clockwise.
- 3. Ground Clearance is the height in meters of crown clearance above adjacent ground level together with the height and direction of the lowest branch
- 4. Stem Diameter is the diameter of the stem measured in millimetres at 1.5m from ground level. The diameter may be estimated (e), where access is restricted. An average (a) may be taken for tree groups. A full inspection is always recommended.
- 5. Protection Multiplier is 12 for single-stemmed trees; for multi-stemmed a cross-sectional area is calculated to derive the DBH, which in turn is multiplied by 12.

6. Protection Radius is a radial distance measured from the trunk centre and is used to calculate the BS RPA.

Page 1

- 7. Growth Vitality Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).
- 8. Structural Condition Good (no or only minor defects), Fair (remediable defects), Poor Major defects present or suspected.
- 9. Landscape Contribution High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- 10. B.S. Cat. refers to British Standard 5837:2012 Table 1 category and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove or very poor quality.
- 11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservation/ecological, historic and commemorative.
- 12. Useful Life is the tree's estimated remaining effective contribution in years.

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Table 1Cascade chart for tree quality assessment

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

BS 5837:2012



Tree Protection Fencing

Specifications (specifically identified by outline box)

2.4m Hoarding

3.0m 100 X 100mm square wooden posts
3 X 38 X 87mm wooden rails affixed to posts
2.4m X 1200 outside grade ply panels (12mm) affixed to rails.
50 X 100mm angled supporting struts affixed internally (quantity as required).

(Supporting posts fixed into position using concrete. All post holes to be hand excavated. Post holes to be no larger than 300 X 300mm.)

Heras Fencing

Heras fencing describes the 2.4m galvanised steel mesh panelled fencing normally supplied with pre-cast concrete bases. **Bases are to be replaced with a fixed frame to which panels are clamped/ firmly fixed.** For extra stability, scaffold poles/4x4 wooden posts are to be firmed into the ground as supporting posts and supporting struts are to be attached at a 45 degree angle on the 'tree-side' of the fencing and fixed into the ground. Supporting posts will be braced at the top and base for added support.





Tree Protection Fencing



Scaffold Framework supporting 'Heras' type panels with signs attached.

Wooden Framework with 'Heras' type panels attached.



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ACS Consulting T: 020 8687 1214 Site: Inspected By: Client:	Arboricultural Site	Supervision Pa	age 1 ACS CONSULTING
Site Agent:	Shaun Clark	Time of Inspection:	3:30pm
Tree Protection Tree protection Comments/Act No action at this	tive Fencing in correct location tion time		
No debris within	a construction exclusion zone		
Comments/Act	ion	Effective fencing i	n position
No action at this	s time		
Amendments	s to Documentation Required		
No amendments Comments/Act Building works o	s required ti on putside scope of Method Statement		
Remedial We	orks		23.4.2007
		Fencing with sign	S
General Com	<u>iments</u>		
Tree protection	and on-site supervsion effective and u	inderstood.	