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ARBORICULTURAL PLANNING CONSULTANTS

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Planning & Development · Hazard & Safety
Tree & Woodland Management - Expert Witnesses

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Arboricultural Implications Report

Construction of New Dwelling at

10, Lady Somerset Road
London NW5

Compiled & presented by
Mark Mackworth-Praed, BA (Cantab)., M.Sc., F. Arbor. A.

February 2010

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APPENDICES.

1. INTRODUCTION.

1.1. Instructions.

1.1.1. Simon Jones Associates Ltd. have been instructed by Mr Rik Webb of Claridge Architects to advise on the likely impact on trees of the proposed construction of a new dwelling on land to the rear of 10, Lady Somerset Road, London NW5; and on how any trees to be retained should be protected from unacceptable damage during its construction.

1.2. Plans.

1.2.1. We have been provided with copies of a suite of plans, elevations and cross-sections of the proposed development by Claridge Architects, under the job reference number 09069, dated November 2009. Information on the locations of the existing trees is based on an earlier survey of the site by Saloria Architects, drawing no. SA432-05, dated July 2004, supplemented by our own measurements taken on site.

1.2.2. The Tree Protection Plan (SJA TPP 01) at **Appendix 2** is based on a fusion of the earlier site survey drawing referred to, and Claridge Architects 0969 GA.01.

2. THE SITE.

2.1. Tree Survey and Inspection.

2.1.1. We visited the site and inspected the trees on Wednesday the 20th of January 2010. Weather conditions at the time were overcast, with intermittent rain. Deciduous trees were not in leaf.

2.1.2. We have visited this address on two previous occasions, in October 2004 and May 2005, in connection with earlier projects proposed for the site. Within the site itself, there are only two trees. In line with the recommendations of British Standard BS 5837: 2005 (published subsequently to our previous survey) our recent inspection has included, in addition to these, two off site trees growing in the rear garden of No. 12 Lady Somerset Road. We have also re-inspected a street tree growing in the pavement of Oakford Road, which could potentially be affected by the proposals. Details of all these specimens have been entered into the tree schedule that can be found at **Appendix 1**.

2.1.3. For ease of identification the trees have all been numbered: these numbers appear in the tree schedule and also on the enclosed site plan.

2.2. Assessment of Suitability for Retention.

2.2.1. The trees have been categorised in accordance with British Standard BS5837: 2005, *Trees in relation to construction – Recommendations*. Further

information on the criteria used for this process can be found in the explanatory notes that accompany the tree schedule.

R:- Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.
A:- Trees of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
B:- Trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
C:- Trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.

2.2.2. On the basis of this evaluation, trees 1 (common lime), 2 (wild cherry) and 3 (common lime) are assessed as Category 'C' specimens, of low quality and value. In the case of trees 2 and 3, this is consistent with our earlier assessments. Tree 1 exhibits structural defects in two out of its three principal stems, and has recently been heavily and unsympathetically crown reduced. Tree 2 appears to be exhibiting some signs of recovery since our 2005 inspection, but is still a drawn-up and etiolated specimen which does not make a significant contribution to the local landscape; and tree 3 is inherently of limited potential due to its close proximity to adjacent structures, and again has recently been heavily and unsympathetically lopped.

2.2.3. Trees 4 (sycamore) and 5 (Swedish whitebeam) are assessed as Category 'B' specimens of moderate quality and value, and of reasonable future potential.

3. ARBORICULTURAL IMPACT ASSESSMENT.

3.1. Proposed Development.

3.1.1. The proposed development is the construction of a new dwelling, with the majority of its internal accommodation below the street level of Oakford Road, taking advantage of the drop in level to the land to the rear of 10, Lady Somerset Road. At the rear of the proposed dwelling, an open terrace/amenity area will be provided, backing onto the garden boundary with No. 12, Lady Somerset Road.

3.2. Arboricultural Impact Assessment - General.

3.2.1. To assist in the prediction of the likely impact of development on trees, a model is used. This model is a central feature of British Standard BS 5837: 2005, *Trees in relation to construction – Recommendations*. This document provides a useful and consistent starting point for the assessment of likely impact.

3.2.2. The British Standard recommends a minimum area around retained trees which should be protected from disturbance **"in order to avoid damage to the roots or rooting environment."** This 'Root Protection Area' (RPA) is calculated, using Table 2 of the British Standard, as an area equivalent to that of a circle with a radius 12

times the stem diameter for single-stemmed trees, and 10 times the basal diameter for trees with more than one stem arising below 1.5m above ground level.

3.2.3. Paragraph 5.2.4. of the British Standard states that the RPA for each tree should be assessed taking account of factors such as the likely tolerance of a tree to root disturbance or damage, the morphology and disposition of roots when these are known to be influenced by existing site conditions, including the presence of existing roads or structures, as well as soil type, topography and drainage. The shape of the RPA (although not its area) may be modified as a result of these considerations.

3.2.4. The recommended RPAs have been calculated, and are drawn as **blue** or **grey circles** respectively for the category 'B' and 'C' specimens which are shown to be retained on the Tree Protection Plan.

3.2.5. The extent of retained trees' crown spreads, based on our survey measurements, are shown by areas **hatched light green** on the Tree Protection Plan. The extent of the trees' crowns is relevant to site layout planning in order to avoid damage to the crowns of trees as a result of construction activities, to allow for future growth, and to prevent unreasonable obstruction of daylight and sunlight to windows of proposed dwellings by adjacent trees, thereby indirectly resulting in their future removal.

3.3. Trees to be Removed.

3.3.1. Tree 2 is within the footprint of the proposed dwelling, and tree 3 is sited immediately to the rear of the proposed main rear elevation. Because of this, their removal will be required in order to enable construction to proceed. As noted above, however, both have been assessed as Category 'C' specimens, and, in the case of tree 3 in particular, of inherently limited potential due to the constraints of its position.

3.3.2. Our previous assessments have demonstrated that these specimens have only a limited role in contributing to local amenity and landscape quality, due to the very restricted extent of the available public viewpoints from which they can be seen. Their removal as a consequence of the current proposal will therefore not have a significant impact on the amenity of the area.

3.4. Protection of Trees to be Retained.

3.4.1. The accompanying Tree Protection Plan SJA TPP 01 shows the general and specific measures to be taken during construction of the proposed development, to ensure that no unacceptable damage is caused to the root systems, trunks or crowns of the trees identified for retention. These measures are indicated by coloured notations in areas where construction activities are to occur either within, or in close proximity to, retained trees, as described in the relevant panels on the drawing, and summarized below.

3.4.2. **Protective Fencing or Barriers.** Appropriate steps are shown to protect the off site street tree (tree 5) from the risk of accidental damage during construction operations. As is the case with most street trees, the majority of its functional root

system is likely to be confined within and under the footway in which it stands. Due to the presence of the boundary wall at the back of the footway and the significant drop in level to the site, it is extremely unlikely that any roots from this tree project or are growing within the site area itself.

3.4.3. Provided excavations for the construction of the new dwelling do not impinge within the public footway, and are suitably shuttered or sheet piled to prevent collapse of soil from underneath it, no adverse effects on the tree's root system should result.

3.4.4. In order to protect the tree's trunk from accidental impacts or contact by machinery, plant or materials, however, protective fencing should be erected around it to the specification recommended in the British Standard, Section 9.2, prior to the commencement of construction, and before vehicles, plant or materials are brought onto the site. The recommended fencing comprises weldmesh panels, securely fixed to a vertical and horizontal framework of scaffolding, as shown in Figure 2 of that document.

3.4.5. The recommended position of this fencing is shown by **bold blue lines** on the Tree Protection Plan. The precise positioning of this will need to be agreed with the Local Highway Authority, in order to maintain sufficient clearance for continued access by pedestrians along the pavement, and will need to be considered in conjunction with other protective hoarding/fencing which may be required along the site frontage to protect public using the footway.

3.4.6. **Manual Excavation under Arboricultural Supervision.** The line of the boundary wall with the rear of No.12 Lady Somerset Road lies within the root protection area of tree no. 1, the off site common lime. In order to safeguard against the possibility of unacceptable root damage being caused to this tree as a result of any excavations required in the event of a need for it to be rebuilt, the first 750mm of the section of any such excavation which is within the tree's RPA shall be dug by hand, under arboricultural supervision. Any roots encountered of over 25mm diameter shall be cut back cleanly to the face of the dig nearest to the tree, using a sharp hand saw or secateurs, and their cut ends covered with damp hessian to prevent desiccation.

3.4.7. Once hand excavation has been completed to the required level and any significant roots have been cut back as described, the remainder of any necessary excavation can be completed by machine, provided this is stationed on and working from outside the tree's RPA, on existing hard surfacing, or on suitable temporary ground boarding. The relevant section where these measures would be required is marked by **orange cross-hatching** on the Tree Protection Plan.

3.4.8. Subject to the implementation of the above measures and adherence to the specific requirements identified in this section, in my opinion the construction of the proposed development can be accomplished without causing unacceptable damage to the trees identified for retention.

3.5. Future Relationship between Proposed Dwellings and Existing Trees.

3.5.1. In my opinion, the off site trees to be retained in the context of this scheme are not in a relationship to the proposed dwelling which is likely to result in any perceived degree of excessive obstruction of daylight or shading to windows of habitable rooms, as the principal fenestrated living room elevation faces north-west, away from the trees in the adjoining garden. In this respect, I do not consider that the trees will interfere with any incoming occupiers' reasonable use or enjoyment of the new property, therefore inevitably leading to pressure to fell or severely prune them, which could not reasonably be resisted by the Local Planning Authority.

4. CONCLUSION.

4.1. Summary and Conclusion.

4.1.1. The proposed development will entail the need for the removal of two trees identified as being Category 'C' specimens of limited quality, potential, or value in terms of their contribution to local amenity. Off site trees, including the street tree on Oakford Road close to the proposed dwelling, however, can all be satisfactorily retained.

4.1.2. Specific potential impacts arising from the development proposals on trees identified for retention can be satisfactorily dealt with by means of the protective measures described in this report and as illustrated on the accompanying Tree Protection Plan. Subject to the implementation and enforcement of the protective measures indicated, trees identified for retention can be successfully integrated with the proposed development.

Mark Mackworth-Praed BA (Cantab.), M.Sc., F. Arbor. A.
February 2010

APPENDIX 1

THE TREE SCHEDULE

Tree Schedule: Explanatory Notes

10 Lady Somerset Road, London, NW5 1UP

This schedule is based on a tree inspection undertaken by Jamie Newman of Simon Jones Associates Ltd., on Wednesday the 20th January 2010. Weather conditions at the time were overcast with intermittent rain. Deciduous trees were not in leaf.

The information contained in this schedule covers only those trees that were examined, and reflects the condition of these specimens at the time of inspection. We did not have access to the trees from any adjacent properties; observations are thus confined to what was visible from within the site and from surrounding public areas.

The trees were inspected from the ground only and were not climbed, and no samples of wood, roots or fungi were taken. A full hazard or risk assessment of the trees was not undertaken, and therefore no guarantee, either expressed or implied, of their safety or stability can be given.

Trees are dynamic organisms and are subject to continual growth and change; therefore the dimensions and assessments presented in this schedule should not be relied upon in relation to any development of the site for more than twelve months from the survey date.

1. Tree No.
Given in sequential order, commencing at "1".

2. Species.
'Common names' are given, taken from MITCHELL, A. (1978) A Field Guide to the Trees of Britain and Northern Europe.

3. Height.
Measured approximately with the aid of a clinometer, given in metres.

4. Trunk diameter.
Trunk diameter measured at approx. 1.5m above ground level; or in case of trunks that divide into separate stems between adjacent ground level and 1.5m , at base, immediately above root flare ('arf'). Given in millimetres.

5. Radial Crown Spread.
The linear extent of branches from the base of the trunk to the main cardinal points, to the closest quarter of a metre. In the cases of small trees with reasonably symmetrical crowns, a single averaged figure is quoted.

6. Crown Clearance.
Distance from adjacent ground level to lowest part of lowest branch, in metres.

7. Age Class.
Young: Age less than 1/3 life expectancy
Middle aged: 1/3 to 2/3 life expectancy
Mature: Over 2/3 life expectancy
Over-mature: Mature, and in a state of decline
Veteran: Surviving beyond the typical age range for species

8. Physiology.
Health, condition and function of the tree, in comparison to a normal specimen of its species and age.

9. Structure.
Structural condition of the tree – based on both the structure of its roots, trunk and major stems and branches, and on the presence of any structural defects or decay.
Good: No significant physiological or structural defects, and an upright and reasonably symmetrical structure.
Moderate: No significant pathological defects, but a slightly impaired physiological structure; however, not to the extent that the tree is at immediate or early risk of collapse.
Indifferent: Significant physiological or pathological defects; but these are either remediable or do not put the tree at immediate or early risk of collapse.
Poor: Significant and irremediable physiological or pathological defects, such that there may be a risk of early or premature collapse.
Hazardous: Significant and irremediable physiological or pathological defects, such that there is a risk of imminent collapse.

10. Comments.
Where appropriate comments have been made relating to:
-Health and condition
-Safety, particularly close to areas of public access
-Structure and form
-Estimated life expectancy or potential
-Visibility and impact in the local landscape

11. Category.
Based on the British Standard "Trees in relation to construction - Recommendations", BS 5837: 2005, Table 1.

Category R: Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.
- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever 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.
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

Category A: Trees of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
- Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features
- Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance
- Trees, groups or woodlands of significant conservation, historical, commemorative or other value

Category B: Trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
- Trees that might be included in the high category, but are downgraded because of impaired condition
- Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality
- Trees with clearly identifiable conservation or other cultural benefits

Category C: Trees of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.
- Trees not qualifying in higher categories
- Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit

TREE SCHEDULE

10 Lady Somerset Road, London, NW5 1UP

No.	Species	Height	Trunk diameter	Radial Crown Spread	Crown Clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
1	Common lime	13.5m	455mm 450mm 300mm	3m N 2.75m E 2.75m S 3m W	6m	Middle aged	Average	Indifferent	Off site tree; three stemmed from base orientated W to E with the smallest being on the W side, W and central stems have columns of exposed heartwood from ground level to 1.75m on the S side, E stem has cavity 500mm high on S side, all three have good surrounding woundwood, likely to be hollow or have columns of decay within; compact canopy as recently heavily pruned; of impared quality and value; of reduced potential.	C (12)
2	Wild cherry	18.5m	290mm (over ivy)	2.5m N 2.75m E 2.75m S 2.5m W	8m N 7m E 5m S 5m W	Middle aged	Average	Indifferent	Single vertical trunk, ivy covered to 4.5m; no significant structural defects noted. Inessential component of the landscape; drawn up in nature with top half of canopy viewed from Lady Somerset Road to the SE. Sparsely branched, but no significant increase in decline symptoms since previous inspection. Of moderate quality but low value; unlikely to be of long-term potential.	C (1)
3	Common lime	12m	510mm	4.25m N 2.75m NE 5m E 4.25m S 4.5m W 5.75m NW	6.75m	Middle aged	Average	Indifferent	Situated on a raised mound, much epicormic growth surrounding the base which has more recently been cut back, large clump of earth within the epicormic growth; single vertical trunk originally pollarded at 4m where it forks into three co-dominant stems; recently heavily reduced to 12m in height with an asymmetrical canopy due to poor pruning; therefore of indifferent structure and of low quality but of moderate value; of limited potential due to proximity of structures and potentially compromised by earlier excavations noted on previous inspections.	C (2)
4	Sycamore	14.5m	455mm	5m N 2.5m NE 4m E 5.25m S 5m W	5m	Middle aged	Average	Moderate	Off site tree; single vertical trunk, base obscured from view by fence; relatively symmetrical canopy with no significant defects observed, suppressed to the NE by adjacent sycamore tree no.1, previously heavily reduced to 10m now with significant regrowth; of moderate quality and value; of long-term potential.	B (12)
5	Swedish whitebeam	9m	405mm	4.75m N 5m E 5m S 2.25m W	4m	Middle aged	Average	Indifferent	Off site street tree; single vertical trunk with normal taper, 150mm diameter area of exposed heartwood with good surrounding wound wood on SE side at 1.5m, likely from vehicle damage, crown break from 3m, two co-dominant stems; slightly asymmetrical canopy due to previous pruning; no significant defects noted; readily visible along Oakford Road; of moderate quality and value; of long-term potential.	B (12)

Root Protection Areas (RPAs)

Root Protection Areas have been calculated in accordance with Table 2 of the British Standard 'Trees in relation to construction – Recommendations', BS 5837: 2005. This is the minimum area which should be left undisturbed around each retained tree. RPAs are portrayed initially as a circle of a fixed radius from the centre of the trunk; but where there appear to be restrictions to root growth the circle is reshaped to reflect more accurately the likely distribution of roots.

Tree No.	***Species***	***RPA***	***RPA Radius***
1	Common lime	226.0m^2	8.48m
2	Wild cherry	38.0m^2	3.48m
3	Common lime	117.7m^2	6.12m
4	Sycamore	93.7m^2	5.46m
5	Swedish whitebeam	74.2m^2	4.86m

APPENDIX 2

TREE PROTECTION PLAN

Trees to be removed

Manual excavation only, under on-site supervision of arboricultural consultant; see inset panel

Shape of Root Protection Area modified to reflect restriction to root growth.

Protective fencing as per BS5837 (subject to agreement with the Local Highway Authority); see inset panel

Neighbouring property

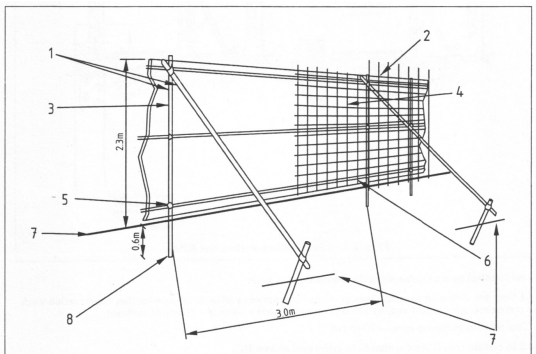
Oakford Road

Lady Somerset Road

No. 10

Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise either 2.4m wooden site hoarding; or a 2.1m high scaffolding framework, with uprights at maximum 3.5m spacings, every other one braced to the ground with 45 degree struts; supporting standard anti-climb 'Heras' welded mesh fence panels secured with anti-lift devices to concrete or plastic bases pinned to the ground by scaffold uprights sunk to a minimum depth of 500mm; individual panels fixed to each other with at least 2 clamps and to scaffolding with heavy-duty cable ties. "TREE PROTECTION ZONE - KEEP OUT" or similar notices to be attached to every fifth panel.



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 face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

TREE PROTECTION FENCING as shown in BS 5837: 2005, Section 9 & Figure 2.

Manual Excavation

Within root protection areas the first 750mm depth of any excavation, whether for proposed foundations, hard surfacing, or underground services shall be undertaken by hand under arboricultural supervision. The soil will be loosened with a pick or fork, and then will be cleared from roots with a compressed air soil pick. All roots will be cut cleanly with a hand saw or secateurs. The edge of the excavation closest to the trees will be covered with hessian sacking to prevent drying out, and if necessary be shuttered with an appropriate material to prevent soil collapse. Where appropriate, the soil beneath this depth may be sheet piled; and deeper excavation may be undertaken by a machine provided it works from outside the root protection areas.

Simon Jones Associates Ltd.	
Project:	10 Lady Somerset Road, London NW5
Client:	CLARIDGE ARCHITECTS
Drawing:	TREE PROTECTION PLAN
Drawing No:	SJA TPP 01
Revision No:	
Based On:	GA.01 (plan-01)
Drawn By: AJB	Date: Jan 2010
Scale: 1:200 @ A3	
Tel:(01737) 813058	Fax:(01737) 816140
sja@sjatrees.co.uk	
Tree nos.: 4	Canopies of trees to be retained:
Trees to be removed: 3	
Category 'B' RPA:	Category 'C' RPA:
Protective fencing:	
Manual excavation:	

For further Information refer to the SJA Tree Schedule

This drawing is designed to reflect only the principles of layout and /or design insofar as these relate to the protection of trees to be retained, and should NOT be read as a definitive engineering or construction method statement. Reference should be made to the architect or structural engineer, as appropriate, over any matters of construction detail or specification, or any engineering standards or regulatory requirements relating to proposed structures, hard surfaces or underground services.