Simon Pryce Arboriculture

Report

Client:	**Daniel Jaffe**
Site:	**8A Hampstead Hill Gardens**
Subject:	**Trees and proposed building work. Survey and Arboricultural Impact Assessment**
Inspection date:	**14 April 2021**
Report date:	**19 September 2021**
Reference:	**21/061**
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1 Introduction

1.1 This report has been prepared for Daniel Jaffe in connection with building work at 8A Hampstead Hill Gardens, London, NW3 2PL.

1.2 I have been asked to inspect trees growing on and near the site and to prepare a report, impact assessment and tree protection plan, as set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction.

Survey method

1.3 This report is based on a site visit and inspection of the trees on 14 April 2021. The inspections were visual and made from ground level within the site or public areas. Some trees are in adjacent gardens, but could be inspected in sufficient detail for the purposes of this report.

1.4 Their maturity, health and structural condition were assessed and each was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual descriptions and other relevant information are contained in the attached schedule and they are shown on the attached plans, based on the originals supplied by Hayhurst & Co.

1.5 The existing plan shows the current site layout. The plan of the proposed layout shows tree protection measures and is the tree protection plan (TPP) specified by BS5837.

1.6 Left and right are used as if facing the site from the road in front unless stated otherwise.

2 Background

The site

2.1 No.8A is on the west side of the eastern arm of Hampstead Hill Gardens and is a substantial modernist house that appears to date from about the 1960s. To the rear is a concrete surfaced parking area and a flat roofed concrete multi-car garage which takes up most of the back of the plot, extending to the side and rear boundaries. The road is a crescent so the back of 8A backs onto the rear gardens of no.10 to the left, nos.2 and 4 to the rear and no.6 to the right. Ground level at the rear of no.8A is lower than the street to the front and the garage roof is approximately 0.9m lower than the gardens of nos.2 - 6.

Proposal

2.2 This is shown on the drawing produced by Hayhurst & Co and is to include full renovation of the existing house, with extension to the rear as replacement for the existing parking garage. The work to the garage area is the only part of this that might affect trees. The existing garage is to be removed and replaced with habitable accommodation of a similar volume. An additional lower level is to be constructed below this with car parking and other facilities. A landscaped garden with seating and leisure area is situated over the new accommodation, at at approximately the level of the current garage roof.

3 Trees

3.1 All the trees in the vicinity are in adjacent gardens and comprise a large mature copper beech in the garden of no.6 to the right, with a mature London plane, three young holm oaks and a middle aged false acacia in the garden of no.2 to the rear.

3.2 The inspections were limited to some degree by the trees being in adjacent gardens, but they all appear to be in good physiological health, and have no signs of structural problems such as decay. The trunks of the beech and plane both lean, but the upper main limbs are generally upright, indicating that they have stabilised and adapted to that.

Trial pit

3.3 On 8 April 2021 a trial pit was dug in a small patch of soft ground in the far right hand corner of the roof next to the boundary. This revealed that the right boundary wall with no.6 has a stepped brickwork footing while the rear wall next to no.2 is newer looking brickwork with a concrete foundation. The patch of topsoil is about 300mm deep on a layer of oversite concrete, with rubble below that. The only roots were above the concrete and seen to coming from the ground vegetation growing in the patch of soil. See photos 1 and 2.

Restrictions

3.4 The local planning authority is Camden Council and their interactive online maps show that the site is in Hampstead Conservation Area.

3.5 There is no specific information about tree preservation orders (TPOs), but Camden's online records show that in 2017 they issued a conservation area (Section211) notice that they did not object to the pruning of tree 1, which indicates that it is not TPO protected.

3.6 Numbers 2 and 4 Hampstead Hill Gardens are Grade 11 listed, but that does not affect trees.

4 General comments

4.1 The two main functions of tree roots are 1) physical support and 2) the supply of water and nutrients from the soil. Roots are opportunist and grow wherever conditions are favourable i.e. there is a suitable supply of air and water. Under open ground, most roots are in about the upper metre of the soil and spread more or less uniformly from the tree, but in urban situations ground conditions are rarely uniform, so depth and spread are far less predictable, particularly near roads and buildings.

Root protection

4.2 Construction near trees can damage roots directly by excavation and indirectly by soil compaction due to heavy machinery and contamination from things like diesel oil and cement. BS5837 recommends measures to avoid or minimise this, the main one being that root protection areas (RPAs) are established round retained trees and fenced to exclude access. No ground work should take place within these without suitable safeguards, such as protecting soft ground against compaction or contamination.

4.3 The starting point is that a single trunked tree's RPA has an area equivalent to a circle with a radius 12 times the trunk diameter measured at 1.5m above ground. The 12x figure is empirical but has proven effective in most cases. In fact most root systems spread much farther, so RPA shapes can be adjusted where appropriate, for instance where ground conditions make root spread asymmetrical. However this must be based on a sound arboricultural assessment of the extent and shape of the root system and equivalent rooting space should be allowed in other directions.

5 Discussion

Direct implications

5.1 The RPAs have been drawn as circles in order to illustrate the areas concerned. All the trees are off site. The RPA of tree 6 is completely clear of the site while the circles of the others overlap into the site to varying degrees, tabulated below. The only trees with significant overlap into the site are the London plane, tree 2, and the three holm oaks.

Tree no	RPA m^2	Incursion into site m^2	%
1	366	5.6	1.5%
2	290	61	21%
3	6.5	1.8	28%
4	6.5	1.8	28%
5	6.5	1.8	28%
6	56	0	0%

5.2 However the figures above are theoretical. All the trees are on higher ground retained by the boundary walls and their foundations. The garage is almost immediately below that, so these structures will be a highly effective barrier to root spread into no.8A. Rooting conditions in the gardens of nos. 2 - 6 are good and they extend beyond the RPA circles, so the roots will tend to exploit the soil under them and will not be disadvantaged by root growth into 8A being prevented.

5.3 The crowns of trees 2 and 3 - 5 overhang the site, but none of the structures in the new garden on the existing garage roof are any higher than the wall and the existing trellis along the rear boundary. Therefore they will not need any pruning to accommodate the proposal and the holm are likely to need periodic trimming if they are maintained as a screen.

Indirect effects

5.4 All the trees are off site and well away from the entrance and any work access routes, so are not vulnerable to incidental damage by moving vehicles or plant. They are also well away from the house, so are highly unlikely to be affected by scaffolding on it, or to be affected by cranes or cherry pickers, if these are needed. They are growing on higher ground, so are not vulnerable to any ground contamination from accidental spillages or mixer washout. Therefore they are not vulnerable to any indirect or incidental harm from the works.

Tree protection

5.5 The trees will be protected against direct and indirect harm from the proposal by the site security / safety fence required by health and safety legislation. That will follow the rear and side boundaries, as shown on the proposed ground level layout plan, which is tree protection plan (TPP) specified by BS5837.

6 Summary and conclusions

6.1 The six trees are all in adjacent gardens to the rear and side of no.8A.

6.2 The root protection area (RPA) circles of four trees overlap into the site significantly. However the trees are growing on higher ground retained by the boundary walls with the garage just below. This will be a barrier to root growth into 8A and the trees have good rooting conditions in the adjacent gardens, so will not be disadvantaged by this.

6.3 The crowns of some overhang but are well clear of the new garden beneath, so will not need any pruning to accommodate the proposal.

6.4 The only work access is from the front and the trees' crowns are well clear of the house, so they will not be affected indirectly by vehicle movements, high access equipment, or other construction activities.

6.5 The trees will be safeguarded by the site security and safety fence, as shown on the tree protection plan (TPP).

6.6 The gardens are all in Hampstead Conservation Area, but it appears that none of the trees are protected by tree preservation orders (TPOs).

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Photographs

1) Trial pit location

2) Trial pit showing minor roots in soil above oversite concrete. Ground level on the far side is about 0.9m higher (approx. 10 brick courses)

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Tree no.	Species	Age / vitality	Ht. m	Spread				Dia. mm	RPA rad m	RPA area m^2	Crwn ht. m	Comments and recommendations	Cat
				N	S	E	W						
The trees are described in sequence from north to south (right to left as seen from the site). They are all in adjacent gardens, but could be inspected in sufficient detail for the purpose of this report. Ground level in the adjacent gardens is about 0.9m higher than the garage roof at 8A													
1	Copper beech	M/N	23	9	8	8	7	900	10.8	366	6	Large mature tree with a trunk that leans NW although that appears to be long standing. It divides at about 5m into three main limbs indicating that it was pollarded early in its life, but was then left to grow on. More recently it has been crown reduced, which was done to a good standard retaining a natural shape. A new small cavities are visible but there are no signs of significant decay, the twig growth is dense and healthy with no signs of die back.	A
2	London plane	M/N	19	7	7	9	6	800	9.6	290	6	Leans NE over the site, but is sound and healthy. It appears to have been pollarded at about 6m when younger then left to grow on. More recently it has been moderately crown reduced and regrowth is healthy looking.	B
3	Holm oak	MA/N	6	2.5	2	1	1.5	120	1.4	6.5	1.5	Row of trees, evidently planted to form a screen. Young, healthy and capable of growing much larger if left.	C
4	Holm oak	MA/N	5	2.5	2	1	1.5	120	1.4	6.5	1.5		C
5	Holm oak	MA/N	6	2.5	2.5	2.5	1	120	1.4	6.5	1.5		C
6	False acacia	MA/N	14	4	4	5	5	350	4.3	56	2	Has some minor dead wood, but that is not uncommon in otherwise good. No signs of pruning or other work.	C

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Notes

Observations are made from ground level unless stated otherwise.
Trunk diameters are measured in millimetres at 1.5m above ground or at the narrowest point between the root buttresses and branch flare in multiple trunked trees; in such cases this is indicated by [c].
Crown spreads are taken from the trunk centre to the end of the longest live branches in the directions indicated [usually the four cardinal compass points]
Crown height is the clearance under the lowest significant branches.

Tree ages are estimated as below, based on the normal life expectancy of a tree of the species concerned on the site:

Immature.	[IM]	Newly planted or self-set tree.
Young	[Y]	Young tree that is established but has not yet attained the size or form of a fully developed example of its type.
Middle aged	[MA]	Between one third and two thirds of its estimated lifespan.
Mature	[M]	Over two thirds of it's estimated life span.
Veteran	[V]	Old tree with characteristic features including hollow trunk, old wounds etc. that give high landscape, ecological and cultural value.
Ancient	[A]	Exceptionally old tree, typically has short, wide hollow trunk and low squat shape due to the crown retrenching over many years.
Dying/Dead	[D]	Dead/dying or so badly decayed that it should be removed without delay if a potential threat.

Vitality is assessed on the basis of what is normal for the species concerned as:

High	[H]
Normal	[N]
Low	[L]
Dead / dying	[D]

Root protection areas [RPAs] - BS5837:2012

For single trunked trees these are calculated as an area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m. For multiple trunked trees it is based on the diameter of a single trunk that would have the same cross sectional area at 1.5m.

Any deviation from a circular plot should take into account the following factors whilst still providing adequate protection for the roots.

- The shape and disposition of the root system when known to be influenced by past or existing site conditions, such as the presence of roads, structures and underground services.
- Topography and drainage.
- The soil type and structure.
- The likely tolerance of the tree to root disturbance based on factors such as species, age and past management.

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Tree categories – based on BS5837: 2012, Trees in relation to design, demolition and construction - Recommendations

Trees for removal				
Category and definition				**Colour code**
Category U				**Red**
Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable structural defect, such that their early loss is expected due to collapse in the foreseeable future, including any that will become unviable after the removal of other U category trees. (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning.) • Trees that are dead or showing signs of significant immediate and irreversible decline. • Trees infected with pathogens significant to the health and/or safety of other trees nearby, or very low quality trees suppressing better ones nearby. *NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			
Trees for retention				
Category and definition	**Criteria – sub categories**			**Colour code**
	1 – mainly arboricultural values	**2 – mainly landscape values**	**3 – mainly cultural / conservation values**	
Category A				
Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good 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)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant historical, commemorative or conservation value. (e.g. veteran trees or wood -pasture)	**Green**
Category B				
Trees of moderate quality with an estimated remaining life expectancy at least 20 years.	Trees that might be included in 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.	Trees present in numbers, usually growing 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	Trees with material conservation or other cultural benefits.	**Blue**
Category C				
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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural benefit.	**Grey**