Simon Pryce Arboriculture

Report

Client:	**Ms Afsaneh Knight and Mr Rupert Cocks**
Site:	**136 Fellows Road, London, NW3 3JH**
Subject:	**Trees and proposed building work**
Inspection date:	**9 February 2022**
Report date:	**19 March 2022**
Reference:	**21/116**
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1 Introduction

1.1 This report has been prepared for Ms Afsaneh Knight and Mr Rupert Cocks in connection with building work at 136 Fellows Road, London, NW3 3JH.

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 9 February 2022. The inspections were visual and made from ground level within no.136 and the road in front. 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 original supplied by K & B Limited.

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.

Other information

1.6 I have checked Camden Council's website for planning restrictions and previous applications for tree work.

2 Background

The site

2.1 Number 136 is on the north side of Fellows Road between 134 to the right (east) and 138 to the left. It has four main storeys and a lower ground floor that opens into a patio at the rear left with steps up into the back garden.

2.2 Camden Council's website shows that the houses are in Belsize Park Conservation Area.

Proposal

2.3 This is shown on the drawings produced by K & B Limited and is to carry out various modifications to the house. The aspect relevant to the trees is that the back of the house is extended into the rear garden, with a lower patio extends across the new rear elevation and has steps up into the garden.

3 Trees

3.1 There are three trees within no.136, a sycamore in the front garden, an ash behind the house and a sycamore near the far end of the back garden. The branch structures show that these have all been crown reduced several years ago and regrowth has been cut periodically since then. Camden's online planning records show that in 2011 they allowed the felling of an ash growing near the sycamore in the back garden and since then they have allowed regular crown reduction of the three existing trees.

3.2 There is also a cherry in the back garden of no.138. It could not be inspected closely, but is healthy looking and has a visible large root extending across the back garden away from the boundary (photo2).

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 they are affected by obstructions and variations in growing conditions. 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 not based on research, 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, or to allow for work within the circle. 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

Implications

5.1 The RPAs have been shown as circles in order to illustrate the areas concerned and rooting conditions within the gardens appear reasonably uniform, so these will be reasonably accurate reflections of actual root spread. The garden wall foundations might inhibit root spread, although from experience they are unlikely to be very deep. The implications for the individual trees are discussed below.

Trees 1 - sycamore

5.2 Roots of the sycamore to the front, tree 1, are likely to spread beneath the front garden and pavement, but will be inhibited by the carriageway. However the tree is well away from the main work area and the root system is almost entirely covered by hard surfaces that will safeguard roots beneath. There is access for vehicles or heavy machinery into the front garden and the tree from incidental impacts from unloading or moving heavy materials by boxing in the trunk and soft ground round the base.

Tree 2 - ash

5.3 The RPA is just clear of the existing house and steps, but the new lower patio and steps take up about 10.5m^2 or 12.5% of the circle. That is within what a healthy tree like this will tolerate, particularly as the disturbance would occur on one side only, with no building work or work access in other directions.

5.4 Any effect will also be offset by the regular pruning of the crown, which will have contained the spread of the root system. That has been demonstrated by research [1] and this kind of pruning is used to manage subsidence risks with street trees [2] in Camden and other London boroughs and is possibly part of the reason for this tree's current management.

5.5 All root disturbance would be on one side of the tree, which is healthy and has good rooting conditions in other directions, although root spread could be constrained to some degree by the right hand garden wall.

5.6 This is a relatively small scale project, the work takes place on one side only and the only access for that is from the front though the house, so this tree is not vulnerable to incidental damage during the work from things like soil compaction or contamination or impacts from heavy machinery.

Tree 3 - cherry

5.7 The cherry at no.138, tree 3, has a large visible root extending away from the boundary, indicating that more of its root system is likely to be under no.138 than the RPA circle might suggest. The upper left hand corner of the new steps is just within the RPA circle but the area concerned is 0.15m^2 or about 0.5% of 28m^2. That is insignificant, particularly as much of the root system will be under the garden of no.38. Its RPA overlaps with that of tree 2, so any of its roots under no.136 will be protected by the measures for that tree.

Tree 4 - sycamore

5.8 The sycamore to the rear, tree 4, is well away from any access route and work or storage area, so is not vulnerable to direct or indirect effects of the work.

Tree protection

5.9 The ash and other trees can be safeguarded during the work by a combination of fencing to exclude access into RPAs and protection on soft ground where work space is needed in them. These measures are illustrated in the plan showing the proposed layout, which is the tree protection plan (TPP) recommended by BS5827:2012. If required these can be specified in more detail in an arboricultural method statement.

Other options

5.10 Tree 2 is not an outstanding specimen and barely visible from the street, so it makes a modest contribution to the street scene and the character and amenity of the conservation area. The regular pruning also makes it look rather unnatural. If it was removed there is ample space farther back in the garden to plant a new tree that could provide a comparable or better contribution to the locality without the problems of working round the ash tree and the need for ongoing management. There is a wide range of suitable species such as sweet gum (*Liquidambar styraciflua*) or beech.

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6 Summary and conclusions

6.1 There are two sycamores and an ash within the property and a cherry just beyond the boundary in the garden of no.138. The three trees within the property have all been crown reduced and are recut regularly.

6.2 Tree 1, the sycamore at the front might be vulnerable to incidental damage from unloading and moving materials, but can be safeguarded by enclosing the trunk and soft ground at the base.

6.3 Tree 2, the ash, is the only one that might be significantly affected by the proposal. This involves some excavation within the RPA, but it is healthy and that is within what it will tolerate, particularly with the regular recutting, which will also contain root growth.

6.4 This is a small scale project and the ash is well away from access routes, so is not vulnerable to incidental damage from heavy plant or vehicles.

6.5 The ash can be safeguarded during the work with some basic fencing to restrict access and protection on soft ground where work access is needed in the RPA. This will also safeguard tree 3, the cherry at no.138.

6.6 Measures to protect the trees are shown on the attached tree protection plan (TPP) and can be specified in more detail in a method statement if required.

6.7 Alternatively removing the ash would have relatively little impact on local amenity and there is space where a suitable replacement would compensate for that without the problems associated with keeping the ash and working round it.

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References

1) Horticulture LINK project 212 (2004) Controlling water use of trees to alleviate subsidence risk

2) London Tree Officers' Association (2008) A risk limitation strategy for tree root claims 3rd edn

Photograph

1) Ash tree 2 from the far end of the garden looking back towards the houses. Crown shows the effect of regular reductions.

2) View over the garden wall of tree 3, the cherry at no.138, showing the large root extending away from the boundary.

Site:

Inspection date:

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 starting in front of the house and going to the rear, as shown on the plan. Asterisks in the first column indicate offsite trees, with house numbers in brackets.													
1	Sycamore	MA/N	11	3.5	4.5	2.5	4	320 + 330	5.5	96	4	Has a slight overall lean to the left (north), but that is long standing and there are no signs of any instability or recent movement in the ground. It has been crown reduced several years ago and recently reduced back to the same points. Some twig growth has been retained and is healthy looking. Twin trunked from about 2m, the fork is narrow, but well formed.	C
2	Ash	MA/N	16	3	3.5	3.5	5	430	5.2	84	5	Has two main upright limbs from about 4m and appears to have been topped or broken at that height in the past and grown on. Like the sycamore it has been crown reduced several years ago and recut recently. Twig growth is healthy looking with no obvious signs of ash die-back.	C
3 * (138)	Cherry	MA/N	6	6	6	4	3	250	3.0	28	1.5	Healthy looking specimen with a wide spreading crown, growing just beyond the boundary wall. It has a very large surface root extending away into the other garden (photo).	C
4	Sycamore	MA/N	15	3	4	3	4	480	5.7	103	4	Twin trunked from about 3m. Has ivy growing up into the crown, but appears sound and healthy. It has also been reduced several years ago but, unlike the others, has not been recut recently.	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**