

Simon Pryce Arboriculture

**Survey, arboricultural impact assessment
and tree protection plan**

Client: Mr Alexander James

Site: 20 Murray Mews, London, NW1 9RJ

Subject: Tree and proposed building work

Inspection date: 21st August 2024

Report date: 14th September 2024

Reference: 24/041

Author: Simon Pryce, BSc, FArborA, RCarborA, CBiol, FICFor

I Introduction

Instructions

- 1.1 This report has been prepared for Architects Hayhurst & Co the architects working for Mr James in connection with building work at 20 Murray Mews, London, NW1 9RJ.
- 1.2 I have been asked to inspect a fig tree growing in the back garden 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 21st August 2024. The inspection was visual and made from ground level within the site back garden.
- 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 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.

Other information

- 1.6 I have checked Camden Council's interactive map which shows that the property is in Camden Square Conservation Area. It also shows that no.22 is Grade II Listed, but that has no arboricultural implications.

2 Background

The site

- 2.1 Number 20 is on the southeast side of Murray Mews and is a two storey terraced house that dates from the 1960s. The tree is in the back garden which is about 7m wide by about 5m deep at the left hand side reducing to about 4m at the right where the rear elevation steps back. There are brick walls on the boundaries with the similar sided back gardens to each side and with the longer rear garden of 23 St Augustine's road to the rear.
- 2.2 The back garden is mainly paved, with planting beds along the sided and rear and a raised rockery in the far right hand corner.

Proposal

- 2.3 This is shown on the plans produced by Hayhurst & Co and involves various internal and external modifications to the house. The aspect that might affect the tree is that the rear elevation retains the step about half way across, but is moved back by about 1m.
- 2.4 The fig tree will be retained and the back garden is re landscaped, with soft ground and new planting around the tree, paving near the house and shrubs in planters at the sides and far end.

3 Trees and other vegetation

- 3.1 The only significant tree in the garden is a mature fig planted in the rear left hand corner by the owner's father not long after the house was built. It is a healthy, vigorous specimen that was reduced earlier in its life and has been pruned regularly since then.

- 3.2 There is also a mock orange (*Philadelphus*) growing on the raised rockery in the far left hand corner of the garden. This has some ivy in the lower parts and is cut back regularly to contain its growth.

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. Many are in about the top metre of the soil, but they can and do grow much deeper if conditions are favourable. The small water absorbing roots die each winter, then new ones develop in spring and grow according to the tree's needs. This allows trees to recover from damage to the fine network of small roots, possibly with some short term reduction in vitality. However damage to larger roots close to the trunk can lead to instability, either immediately or in the longer term, if the wounds are colonised by decay fungi.

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 it has proven effective in most cases. In fact most root systems spread well beyond that and significantly deeper than 1m. Where trees have more than one well defined trunk the RPA is based on the diameter of a single trunk that would have the same cross sectional area. That is not practical with shrubby plants many small stems, so their RPAs are based on the average crown spread.
- 4.4 Under open ground roots spread more or less uniformly, but they are affected by obstructions and variations in ground conditions, so depth and spread are far less predictable near roads and buildings. Where there is evidence that the root system is irregular the RPA shape should be adjusted accordingly. That can also compensate for work within the original circle, but 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 fig tree's RPA has been drawn as a circle in order to illustrate the area specified in BS5837, which is about the same as the existing back garden at 35m², although the regular crown reduction will have limited root spread. The garden wall foundations will inhibit root spread beyond the garden boundaries, but are unlikely to be deep enough to be a complete barrier. Most roots will be in the garden, mainly under the planting bed and rockery, rather than beneath the paving. The existing and proposed footprints are well clear of the tree and any major structural roots and the area to be soft landscaped is centred on the tree and larger than the existing planting beds. In the long term this improves growing conditions and gives a significant safety margin despite the restrictions to root spread.

Indirect implications

- 5.2 This is a small scale project and the only work access is from the mews to the front, so the fig tree is not vulnerable to incidental damage from heavy plant or delivery vehicle movements, which can be an issue on larger sites. The only access for the hard landscaping is through the house, so that will need to be done at the same time as the main internal works, or at least before final finishing and decoration. The modifications to the back of the house will need access and work space in the back garden, but there is enough room for fencing to protect the tree during the works. The existing paving will safeguard any roots beneath against physical damage, but the joints are open, so any spilt contaminants, such as cement, could harm roots.

Tree protection

- 5.3 The fig tree can be protected during these works with a combination of fencing and protection of any soft ground where access is needed. Fencing is often done with welded mesh, but this is supplied as panels 3.5m long so plywood on a scaffolding frame or pedestrian control fence would be more suitable and sufficient for this purpose. Soft ground can be protected by 18mm plywood sheets over a membrane, or some proprietary systems are available.
- 5.4 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.

6 Summary and conclusions

- 6.1 The only tree concerned is the mature fig growing in the rear left hand corner of the back garden. It is a healthy, vigorous specimen that has been pruned regularly for much of its life.
- 6.2 Root spread will be inhibited by the garden walls, so most of the roots will be in the planting beds round the edges of the garden, with some beneath the paving.
- 6.3 The proposal moves the rear elevation about 1m back, but it is still well clear of the tree. The proposed soft landscaping, centred on the tree, increases the area of soft ground and improves growing conditions.
- 6.4 This is a small scale project with no access for heavy machinery, so the tree is not vulnerable to incidental damage from the work.
- 6.5 The tree can be safeguarded during the works with a combination of fencing and ground protection shown on the tree protection plan. This can be detailed in a method statement if required.

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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 fig tree and shrub are both in the back garden, as shown on the site plans.													
I	Fig	M/N	5	2	2	2	2	180 150x2	3.3	35	2	Healthy specimen that was reduced to about 2.5m earlier in its life and is pruned regularly to maintain it to about the current size. Regrowth is dense and vigorous.	B
	The only other significant vegetation is a large mock orange (<i>Philadelphus</i>) growing on a raised rockery in the far right hand corner of the garden, which is also cut back regularly, which is the normal way to manage this kind of shrub.												

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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 its 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	<ul style="list-style-type: none">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. <p>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.</p>			
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