Simon Pryce Arboriculture

Report

Client:	**London Borough of Camden**
Site:	**Three sites at Lamble Street and Barrington Close, Gospel Oak, London, NW5**
Subject:	**Trees and proposed building work**
Inspection date:	**3 September 2013**
Report date:	**11 September 2013**
Reference:	**13/066**
Author:	**Simon Pryce, B.Sc., F.Arbor.A, C.Biol, MSB, MICFor Arboricultural Association Registered Consultant**

CP House, Otterspool Way, Watford, Herts, WD25 8HP
tel. 01923 467600
www.simonpryce.co.uk
info@simonpryce.co.uk

Arboricultural Association
REGISTERED CONSULTANT

1 Introduction

1.1 This report has been prepared on the instructions of Burt Haward Architects (BHA) who are working for the London Borough of Camden in respect of proposals to build on three sites in Lamble Street and Barrington Court, London, NW5.

1.2 I have been asked to inspect trees growing on the sites and to prepare a report on them, as set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction. This report is based on a site visit and visual inspections on 21 August 2013.

1.3 The trees were measured, their maturity, health and structural condition assessed and each was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual description and other relevant information are contained in the attached schedule and it is shown on the site plans, based on originals prepared by BHA.

2 Background

Sites

2.1 This project involves the redevelopment of three small sites:

1. Site 1 is a level paved plot about 10m by 14m on the corner between Lamble Street and Elaine Grove.
2. Site 2 is the pram store for Barrington Close and is on the south side of Lamble Street. It is about 11m by 13m and currently occupied by three brick built sheds with flat roofs. It is partly dug into the bank next to the tower block, so is largely surrounded by a retaining wall with ground level on the other side being up to 2m higher.
3. This is an irregular site approximately 20m by 12m and currently asphalt surfaced with a row of four garages at the E end and a plant room at the W end.

2.2 There is no record of any investigation of soil conditions on any of the sites, but the online 1:50,000 scale British Geological Survey (BGS) shows that the local subsoil is London clay and available bore hole records show that this extends down to at least 10m, probably more. This is consistent with my experience of work in this area.

Proposals

2.3 These are shown on the drawings produced by BHA and are to build new houses on the plots. In most cases they will occupy most of the plot areas.

2.4 An additional proposal is to remove part of the bank south of Site 2 in order to straighten the footpath next to 16 - 39 Lamble Street and to improve visibility along it in the interests of security.

3 Oervations - trees and other vegetation

3.1 Significant trees are described in more detail in the schedule and shown on the site plan. They include a London plane in the street next to the SW corner of site 1, some declining birches on the bank east of site 2 and a large Turkey oak to the south. Farther south along the bank are a mature oak and two pear trees, all of which have recently been crown reduced. The only trees near Site 3 is a well established wild cherry that has been reduced regularly.

4 Discussion

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 will grow wherever conditions are favourable i.e. there is a suitable supply of air and water, so most tend to be in about the upper 600mm of the soil and even shallow excavation or minor level changes can be harmful. Construction near trees can also be harmful in less direct ways, such as soil compaction caused by heavy machinery and spillage of toxic materials such as diesel oil and cement.

4.2 British Standard 5837: 2012, Tree in relation to design, demolition and construction – Recommendations, specifies measures to avoid or minimise damage to trees that are retained on or near construction sites. One of the more important recommendations is that root protection areas [RPAs] are established round retained trees and that no ground work takes place within them. These are normally enclosed by suitable fencing such as weld mesh sections supported by scaffold poles driven into the ground.

4.3 The size of the RPA is based on the size of the tree concerned. The starting point is that for a single trunked tree it has an area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m. The shape and layout of the RPA can be modified, if this is deemed appropriate, particularly where there is evidence that root spread is uneven.

Implications for these sites

RPAs

4.4 The root protection areas have been shown on the drawings as circles in order to illustrate the areas involved, although on urban sites like these actual root spread will be strongly affected by the surroundings. In particular street tree roots will grow readily under pavements, but do not generally extend far under the carriageway, which will have a much deeper and harder sub base. Building foundations can inhibit the spread of major roots, depending on their depth, while deep retaining walls can be highly effective barriers. These points have been taken into account in the assessments below.

Site 1

4.5 The proposal is for a two storey house continuing the existing terrace on to the Elaine Grove boundary. A significant part of that is within the RPA of the plane tree in the street (tree1), if treated as circle. The existing boundary wall might inhibit root growth, but is unlikely to prevent it completely, particularly with the carriageway on two sides.

4.6 There is therefore some potential for root damage, although there are mitigating factors. As the subsoil is London clay, which is highly shrinkable, the house will need deeper foundations than normal. The exact design is an engineering matter, but it is likely that the most suitable design will be piles and a ground beam or raft. This involves far less excavation than conventional strip footings, although a shallow trench is likely to be needed in order to accommodate a ground beam. This can be addressed by shallow trial excavation to determine whether any roots have grown into the site. If so options would include pruning small ones or adjusting pile locations to miss larger ones.

4.7 Planes are naturally highly resilient, and this tree is a healthy middle aged specimen, so will be less vulnerable to adverse effects from nearby work than most other species. It has been reduced recently, which appears to be done on the regular cycle adopted with many street trees. That will also help to compensate for the effects of any root disturbance and might need to be modified slightly in future to maintain clearance from the completed building. As spread on the other side is also restricted slightly by the tree across the road that could help to make it more symmetrical.

4.8 The site fence will protect the tree from incidental damage from the work, although it would be advisable to box in the trunk with scaffolding or plywood to reduce the risk of any impact rom delivery vehicles or plant.

Site 2

4.9 The new house replaces existing buildings in what amounts to a rectangular pit, the retaining wall of which will remain in situ. The RPA of tree 3, the nearest birch in front of the tower block, just impinges on this but, while root growth will be restricted by the road to the north, the tree also has ample space elsewhere on the bank. Some roots from the Turkey oak to the south might have grown under the retaining wall but it is well beyond the RPA circle and, as the wall will remain the tree will not be vulnerable to any direct effect.

4.10 The site layout also helps to protect the trees from incidental damage during the work, and that would be supplemented by the site safety fence, so specific tree protection fencing is not likely to be needed. This also applies to tree 2, the Norway maple in the street to the west and trees farther south along the bank.

Bank modification

4.11 The original proposal is to take off the corner of the bank to continue a straight line from the SW side of Site 2. At the southern end that would involve some ground work to form a new retaining structure near the bases of trees 9 and 10, two pears which are among the older and more interesting specimens. The drawing shows a preferred option which stops before the pear trees. It creates a bend of about 8 degrees, which will not create any visibility or security issues. Another option would be to make the new wall straight with a short side step to avoid the pear trees, as shown on the drawing.

4.12 The modification also involves working close to the Turkey oak, although the overall loss of soft ground is 18m^2 for the preferred line, of which about 11m^2 is within the RPA circle. Although the circle is not necessarily an accurate indication of actual root spread these areas involved are a small proportion of the RPA as whole, which is 174m^2. The tree has ample rooting space on the rest of the bank and, as it leans and has most of its weight on the SW, the most important structural roots will be on the other side. There are also work methods that would minimise root disturbance. The preferred option in arboricultural terms would be to sheet pile along the line of the new wall in order to cut any roots cleanly and avoid leaving them exposed to air. If clearance under the tree is inadequate for the piling rig an alternative would be to hand excavate and cut any roots cleanly.

4.13 Tree 8, the oak at the top of the bank near the tower block, is well away from the proposed cut into the bank and from Site 2, although it has some evidence of die back so should be checked regularly.

Site 3

4.14 Cherry roots can be invasive, so some are likely to be under the garages. This tree has more uniform rooting conditions than most of the others and the area involved is 19m^2 or about 22% of the RPA if root spread is even. That is less than ideal, although it is within what a healthy individual like this will tolerate, particularly one that has its top pruned regularly. It could be worked round with suitable protective fencing, but is not an outstanding specimen and the alternative would be to remove it and plant a new tree as part of the landscaping of this area.

5 Summary and Conclusions

5.1 With most of the trees here root growth is likely to be affected significantly by ground conditions, so the RPAs drawn as circles should be treated as indications of the areas concerned rather than definitive locations of roots.

5.2 Some roots from the plane tree in the street are likely to be under where the new house will be on Site 1, but that could be investigated without undue difficulty and the new house is likely to need piled foundations which are inherently less damaging than traditional strip footings. Some protective measures will be needed against direct and incidental damage.

5.3 Site 2 is separated from the surrounding trees by a deep retaining wall which is to remain, so the trees are highly unlikely to be affected directly and the site safety fence will protect them from incidental damage without needing specific tree protection fencing.

5.4 Where the footpath is straightened it would be preferable to adjust the line in order to avoid the two pear trees, either with a slight angle where it will meet the existing wall or a short side step to avoid the pear trees.

5.5 Some roots from the Turkey oak are likely to be present in the ground to be cut away but represent a small part of its root system and are on the least critical side.

5.6 Tree 11, the cherry, is close to the existing garage block and new house on Site 3 and some roots are likely to be present. The tree is likely to tolerate the disturbance with suitable protective measures, but is not an outstanding specimen and an alternative be to remove it and plant a replacement as part of the new landscaping.

Simon Pryce

Simon Pryce B.Sc, F.Arbor.A, C.Biol, MSB, MICFor
Arboricultural Association Registered Consultant

Site: **Lamble Street and Barrington Court, Gospel Oak, London**

Inspection date: **3 September by Simon Pryce**

Tree no.	Species	Age / vigour	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 order, as shown on the plans, starting with site 1 at the western end of Lamble Street then trees near sites 2 and 3.													
Site 1													
1	London plane *Platanus x hispanica*	MA/N	17	7	8	8	6.5	590	7.1	157	4	Slightly one sided due to proximity of the tree across the road, but sound and healthy. Has been reduced periodically and grown on. • *No work needed at present.*	**B1**
Site 2													
2	Purple Norway maple *Acer platanoides*	MA/N	15	6	2	6	5	490	5.9	110	5	Leans north and has been heavily cut back to clear the building, so is one sided. Growing in a raised bed about ½m high, which will have contained root spread and some are girdling round the base of the trunk. Minor infestation of chestnut scale, which is unsightly but does little harm. • *No work needed at present but will need regular pruning to keep clear of the building.*	C2
3	Birch *Betula pendula*	MA/L	11	6	2.5	5	6	390	4.7	69	4	Leans heavily over the road and has a one sided crown due to growing near others. Has a minor wound at the base but is reasonably sound looking. There are signs of recent disturbance round a drain cover near the base. • *No work needed at present, but should be monitored.*	C2
4	Birch *Betula pendula*	MA/N	9	3	0	1	2	160	1.9	12	4	Suppressed, leaning heavily and has some large wounds on the trunk. Not an imminent threat but has no long term potential. • *Remove.*	**U**
5	Birch *Betula pendula*	MA/L	6.5	2.5	1.5	1.5	2.5	140	1.7	9	1	Small bushy tree with a large wound on the trunk. Not an imminent threat but has no potential. • *Remove*	**U**
6	Birch *Betula pendula*	MA/L	9	5	1	3	1	240	2.9	26	4	Leans heavily over the road and the trunk has numerous scars which will decay. • *Fell for safety.*	**U**
7	Turkey oak *Quercus cerris*	M/N	16	6	8	7	11	620	7.4	174	4	Leans heavily but is sound and healthy. Has a cavity at about 5m on the east side of the trunk but it is being occluded by new growth. Has minor dead wood in the crown but that is normal. • *No work needed but the cavity should be inspected by climbing.*	**B1**
The bank on which trees 7 - 10 is growing is also covered with sucker shoots from one or more plum trees, which have now gone. The presence of these and the pear trees suggests that this area was formerly an orchard or large garden. They do not need any attention although selective thinning would allow some of the better ones to develop into reasonably good quality trees.													

Site: **Lamble Street and Barrington Court, Gospel Oak, London**

Inspection date: **3 September by Simon Pryce**

Tree no.	Species	Age / vigour	Ht. m	Spread				Dia. mm	RPA rad m	RPA area m^2	Crwn ht. m	Comments and recommendations	Cat
				N	S	E	W						
8	Oak *Quercus robur*	MA/L	21	5	7	2.5	5	7	640	7.6	183	On sided where it has been pruned to clear the building. Crown is dying back but it has been reduced recently which makes that difficult to assess accurately. • *No work needed at present, but should be monitored.*	C1
9	Pear *Pyrus* sp.	M/N	12	5	1	1.5	6	430	5.2	84	5	Pair of old trees, not very vigorous, but reasonably healthy and still produce fruit. They lean due to the proximity of the oak behind, but appear well rooted and both have recently been reduced lightly. C category individually, collectively they warrant B. • *No work needed at present, but should be monitored.*	**B2**
10	Pear *Pyrus* sp.	M/N	12	1	5	2	6	420	5.1	81	5		
Site 3													
11	Cherry *Prunus avium*	MA/N	12	5	5	5	5	430	5.2	84	4	Healthy and quite vigorous. Has a narrow fork at about 2m, but that is well formed with no ingrown bark, which can create a risk of splitting. Has been reduced and is regrowing rapidly. • *Reduce back to former pruning points every 2 - 4 years.*	C1

Simon Pryce

Simon Pryce, B.Sc., F.Arbor.A, C.Biol, MSB, MICFor
Arboricultural Association Registered Consultant

Site: **Lamble Street and Barrington Court, Gospel Oak, London**

Inspection date: **3 September by Simon Pryce**

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.
Over mature	[OM]	Declining and/or approaching the end of it's natural lifespan.
Dying/Dead	[D]	Dead/dying or so badly decayed that it should be removed without delay if a potential threat.

Vigour is assessed on the basis of what is normal for that 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.

Site: **Lamble Street and Barrington Court, Gospel Oak, London**

Inspection date: **3 September by Simon Pryce**

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**			**Identification on plan**
	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**