Simon Pryce Arboriculture

Report

Client:	**London Borough of Camden**
Site:	**Fortune Green Play Area, Fortune Green, London, NW6 1DR**
Subject:	**Tree survey**
Inspection date:	**2 February 2010**
Report date:	**18 February 2010**
Reference:	**09/182**
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1 Introduction

1.1 This report has been prepared on the instructions of Livingston Eyre Associates, who are acting for the London Borough of Camden in connection with proposed new building on the site.

1.2 I have been asked to inspect trees growing on or near the site and to provide a preliminary report on them, as set out in British Standard 5837: 2005, Trees in Relation to Construction.

1.3 The site was visited and the trees inspected on 2 February 2010. The inspections were visual and made from ground level, with no climbing or test boring as these were not warranted.

1.4 The trees were measured, their maturity, health and structural condition assessed and each one was assigned to one of the four retention categories [A,B,C,R] specified by BS5837. The individual descriptions and other relevant information are contained in the attached schedule and they have been numbered on the attached site plan, based on an original supplied by Livingston Eyre Associates.

2 Background

Site and surroundings

2.1 The site is on the north western edge of Fortune Green and is about 110m long by about 30m wide, aligned approximately south west - north east. The main vehicle entrance is about half way along the south east side and there is a pedestrian gate several metres to the south west of this. The site is currently a play centre, with several single storey wooden buildings in the central part and a play area with equipment for younger children at the south western end. Most of the north eastern part of the site is an all weather sport pitch with another play area beyond it at the far end.

Trees

2.2 The most significant trees are a group of mature evergreens, mainly yews, in the southern corner and running along the south eastern side almost to the entrance. Their sizes indicate that they are at least 100 years old, clearly pre dating the current use of the site and have no signs of any recent active management, but are generally sound and healthy. They form a significant feature of the site and the surrounding area and also provide screening between the southern part of the site and the adjacent park.

2.3 There are also some younger trees, most of them 20 - 30 years old to judge from the their size and appearance. These are mainly birches, rowans and some ornamental species, including several ceanothuses. Most of these are between the belt of older evergreens and the building and there is a row along part of the north western boundary.

2.4 Camden Council's web site indicates that the site is not in a designated Conservation Area. It does not give any information about individual tree preservation orders [TPOs]. It is unusual for council owned trees to be protected by TPOs, although it does occur on occasions, especially where sites have changed hands.

2.5 The trees are all described individually in the attached schedule and shown on the site plan.

Proposal

2.6 This is shown on a drawing supplied by Livingston Eyre and involves removing the existing buildings and replacing them with a single circular one slightly farther to the north east. This occupies most of the width of the plot and extends onto part of the existing sports pitch. The play area at the north eastern end of the site is retained and the sports pitch relocated to the south western end.

2.7 The drawing shows five trees removed to accommodate the pitch, nos. 9, 10, 11, 12 and 27 of this report. These are all birches, except no.12, which is a lime. The new building is very close to tree no.28, a goat willow, and near trees 29 - 30, a mixture of rowan, spindle and ceanothus.

3 Implications for this case

General comments

3.1 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 can be damaging. Construction work near trees can be harmful in other, less direct ways, for instance soil compaction caused by heavy machinery and by spillage of toxic substances such as diesel oil and cement.

3.2 British Standard 5837: 2005, Tree in Relation to 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. 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 is a circle with a radius 12 times the trunk diameter at 1.5m, while with multiple trunked trees the area is equivalent to a circle 10 times the radius just above the root collar. In either case the shape and layout of the RPA can be modified, if this is deemed appropriate by a suitably qualified arboriculturalist.

Implications for this case

3.3 The most important trees on the site are the group of evergreens in the southern corner. As well as being the better individual specimens the group as a whole is a prominent feature of the locality and makes a significant contribution to local amenity. The existing buildings are well outside the RPAs of these trees and can be demolished and removed without any major risk of harming them, particularly if the existing vehicle entrance is used. The new building is farther from them and they are not unduly vulnerable to direct or indirect damage during construction, although it would be advisable to install suitable fencing to protect them.

3.4 The south eastern and south western edges of the new sports pitch do extend into the RPAs of several of these trees. A detailed specification has not been provided, but direct and indirect damage can be reduced by minimising excavation and using a permeable surface. This might elevate the surface slightly, but that does not appear to present major problems in this case.

3.5 The proposal drawing shows five trees removed to accommodate the pitch, but these are all younger specimens. All are C category trees, with 9, 10 and 11, all birches, being low in the category and making a minor contribution, individually and collectively. Numbers 12 and 27, a lime and a birch respectively, are better individuals and have some potential, but neither of them is a notable specimen, even from within the site. From outside the site they are largely hidden by the older evergreens, so their removal would have little visual impact on the wider area. It could be more than adequately compensated for by suitable new planting.

3.6 The new building is too close to trees 28 - 30 for them to be retained, especially tree 28, a large goat willow. It is a reasonable specimen, but not outstanding, while no.29 is a group of poor specimens recommended for removal in any event and no.30 is a multiple trunked rowan of little amenity value. The removal of these would also have little visual impact in the wider area and could be compensated for by suitable new planting.

3.7 Once the layout is finalised a more detailed tree protection plan and method statement can be prepared. This can be based largely on this report and include more detailed specifications for fencing and other measures and the sequence of demolition and construction operations.

Tree work

3.8 Most of the retained trees do not need any immediate attention but, in view of their sizes and the use of the site, it would be advisable for them to be inspected regularly to assess their health and structural condition and the need for any work. This should be done annually and after any major storms.

3.9 Any treework should be carried out in accordance with BS 3998: 1989, Recommendations for Treework, and any other relevant standards. It is essential that the contractor doing the work has appropriate third party and public liability insurance.

3.10 Where any trees or other woody plants are removed it would be advisable to remove the stumps and main roots if possible. Apart from being unsightly and often inconvenient stumps are frequently colonised by honey fungus [*Armillaria* sp.], which can then spread and infect other trees nearby. Susceptible species are often killed and in other cases it can decay the roots while the tree is alive, making it unstable.

Restrictions

3.11 Council owned trees are not often protected but it would be advisable to confirm this before any work is undertaken. The council can grant themselves consent for pruning or felling protected trees. There are also some relevant exemptions from the normal procedures including any work *immediately* required to implement a proposal that has *full* planning permission. This is deemed to be covered by the planning permission for the development. The removal of dead, dying and dangerous protected trees is also exempt.

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Site: **Fortune Green Play Area, Furtune Green, London, NW6 1DR**

Inspection date: **2 February 2010 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 site plan, starting near the vehicle entrance and going round the site clockwise. [b] denotes diameters measured at the base.													
1	Rowan *Sorbus aucuparia*	MA/L	6	3	0	1.5	2	150	1.8	10.6	2	Severely suppressed and leaning heavily, has no potential. • *Remove*	R
2	Rowan *Sorbus aucuparia*	MA/L	5	0.5	0.5	1.5	1.5	50	1.0	2.9	2	Also severely suppressed. • *Remove*	R
3	Holly *Ilex aquifolium*	MA/L	5	3	2	4	3	300 [b]	3.0	29	2	Has sparse foliage, otherwise reasonably healthy looking. • *No work needed at present.*	C 2
4	Elder *Sambucus nigra*	M/L	6	3	3	5	3	270 [b]	2.7	23	3	One sided and close to the fence. Not a good specimen, but has no major defects. • *No work needed at present.*	C 2
5	Holly *Ilex aquifolium*	M/L	8	4	4	3	2	180, 90, 2 x 160	3.6	41	3	Has had lower branches removed in the past. Numerous scars on the trunks but fair otherwise. • *No work needed at present.*	C 2
6	Rowan *Sorbus aucuparia*	MA/N	7	2.5	0	2	2	140	1.5	7.3	3	Leans due to the proximity of other trees, otherwise fair. • *No work needed at present.*	C 2
7	Rowan *Sorbus aucuparia*	MA/L	7	2.5	0	1	1	10	1.0	2.9	2	Badly suppressed and has no potential. • *Remove*	R
8	Birch *Betula pendula*	MA/N	10	2	0	1	2	75	0.9	2.6	3.5	Leaning and heavily suppressed. • *Remove.*	R
9	Birch *Betula pendula*	MA/N	12	4	2	4	3	210	2.6	21	3	Drawn up and has a slightly sinuous trunk but is in reasonable condition otherwise. • *No work needed at present. Removed for proposal*	C 2
10	Birch *Betula pendula*	MA/N	11	2	2	1	2	140	1.7	9.3	4	Has the remains of a dead climbing plant in the crown, otherwise good. • *No work needed at present. Removed for proposal.*	C 2
11	Birch *Betula pendula*	MA/N	12	4	2	4	1	160	1.9	11.5	4	Leans due to the proximity of other trees, good otherwise. • *No work needed at present. Removed for proposal*	C 2
12	Lime *Tilia x europaea*	MA/N	13	4	1	4	4	220	2.7	22	5	Healthy, relatively young tree with some narrow, potentially weak forks. • *No work needed at present, although if retained it could be improved by light tinning and formative pruning. Removed for proposal*	C 1
13	Yew *Taxus baccata*	MA/N	10	5	5	5	5	560 [b]	5.6	97	3.5	Has had lower branches removed in the past. Healthy specimen that provides significant amenity and screening. • *No work needed at present.*	B 2

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				N	S	E	W						
14	Yew *Taxus baccata*	MA/N	10	5	5	3	4	250 260 380	6.3	123	4	Slightly sparse upper growth, but has healthy epicormic shoots growing from the trunk. • *No work needed at present.*	B 2
15	Bay *Laurus nobilis*	MA/N	10	5	2	2	2	3 x 160, 130	3.6	42	3	Smallest stem has been cut back and top growth is slightly sparse, healthy otherwise and contributes to the screen. • *No work needed at present.*	B 2
16	Yew *Taxus baccata*	MA/N	10	4	4	4	2	320	3.8	46	4	Slightly drawn up and spare on the north side. Has a dead trunk becoming ingrown but sound and healthy otherwise.	B 2
17	Yew *Taxus baccata*	MA/N	10	4	5	4	3	370	4.4	61	4	Foliage is slightly sparse, otherwise good. • *No work needed at present.*	B 2
18	Holly *Ilex aquifolium*	MA/N	10	1	6	2	3	220	2.7	22	4	Leans heavily over the fence due to the proximity of the larger older yews, otherwise fair. • *No work needed at present, but should be monitored. Remove small topped elder near fence.*	C 2
19	Yew *Taxus baccata*	MA/N	11	5	5	5	5	480	5.7	103	4	Multiple trunked from 1 - 1.5m, otherwise good. • *No work needed at present.*	B 2
20	Yew *Taxus baccata*	MA/N	11	6	3	6	3	450	5.3	90	3	Also slightly spare but is a large dominant tree with healthy epicormic growth on the trunk. • *No work needed at present.*	B 2
21	Lime *Tilia x europaea*	MA/N	12	5	5	5	5	480	5.7	103	4	Growing in the park outside the site boundary. Has recently been thinned and reduced lightly. • *No work needed at present.*	B 1
22	Privet *Ligustrum vulgare*	MA/N	3	2.5	2	3	2	200 [b]	2.0	12.6	1	Small shrub. • *No work needed at present.*	C 2
23	Elder *Sambucus nigra*	M/N	6	2	2	2	2	2 x 160	2.7	23	2	Has been topped and grown on. Close to the fence but not an immediate problem. • *No work needed but not suited for long term retention.*	C 2 [R]
24	Norway maple *Acer platanoides*	MA/N	13	5	5	5	5	2 x 270	4.6	66	3	Has a narrow, potentially weak fork at the base. Lower branches have been removed. Bleeding from the trunk is consistent with infection by *Phytophthora*, which can be fatal. • *No work needed at present, but should be monitored.*	C 1
25	Whitebeam *Sorbus aria*	Y/N	7	2.5	1	2	1.5	100	1.2	4.7	2	Leans due to the maple otherwise fair. • *No work needed at present.*	C 2

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				N	S	E	W						
26	False acacia *Robinia pseudoacacia*	M/L	5	2	2	2.5	2	290	3.4	37	1.5	Mop headed variety. Has been badly pruned in the past and has decay in the top of the trunk. Not large enough to be a major hazard but its useful life is limited. • *Remove.*	R
27	Birch *Betula pendula*	MA/N	12	4	3	3	3	240	2.9	26	4	Sides of the planter surrounding it are collapsing. Leans slightly but is stable and healthy. • *No work needed at present. Removed for proposal.*	C 1
28	Goat willow *Salix caprea*	M/N	11	4	4	4	5	380	4.6	66	3	Leans slightly and some lower branches have been removed badly but it is sound and healthy. • *No work needed at present.*	C 1
29	Various	MA/L	5 avg.	1 avg.				80 avg.	1.0	2.9	2	Row of suppressed ceanothus and a rowan, all in poor condition and with minimal potential. • *Remove.*	R
30	Rowan *Surbus aucuparia*	MA/N	8	2	2	2	2	250 [b]	2.5	2.5	19	Multiple trunked group, not outstanding but reasonably healthy. • *Could improve with light formative pruning.*	C 2
31	Spindle *Euonymus europaeus*	MA/N	4	1	1	2	2	220 [b]	2.2	15	1.5	Leans but sound and healthy. • *No work needed at present.*	C 2
32	Whitebeam *Sorbus aria*	MA/N	7	2	2	2	2	180 [b]	1.8	9.6	2	Healthy, dominating no.33 slightly. • *Could improve with light thinning and formative pruning.*	C 2
33	Whitebeam *Sorbus aria*	MA/N	7	2	2	2	1	130 [b]	1.3	5.2	2	Slightly one sided, otherwise fair. • *Could improve with light thinning and formative pruning.*	C 2
34	Ceanothus *Ceanothus arboreus*	M/L	5	1	1	4	1	190 [b]	1.9	11.5	2	Has sparse foliage and is declining. • *Remove.*	R
35	3 no. Ceanothus *Ceanothus arboreus*	M/L	5	1 - 5				130 avg.	1.5	7.3	2	First two are in poor condition and the third one is dead. • *Remove all 3.*	R

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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.
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]

Condition is an overall assessment of the tree's health, vigour and life expectancy. Intermediate grades are used where appropriate.

Good	[G]
Fair	[F]
Poor	[P]
Dead	[D]

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Tree categories – based on BS5837: 2005, Trees in relation to Construction - Recommendations

Trees for removal				
Category and definition				**Identification on plan**
Category R				Dark Red
Tree so poor that any existing value would be lost within 10 years and which should, in the current context, be removed as sound arboricultural management	• Trees that have a serious, irremediable structural defect and are likely to collapse in the foreseeable future, including any that would become unviable after the removal of other R category trees. • 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 low quality trees suppressing better ones nearby. NOTE: Habitat reinstatement might be appropriate, e.g. bat boxes in other trees nearby.			
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 and value, capable of making a positive contribution for at least 40 years	Particularly good examples of their species, especially if rare or unusual. Essential components of groups or arboricultural features, whether formal or semi formal.	Trees that provide a definite screening or softening effect to the locality in relation to views in or out of the site or those of particular visual importance	Trees, groups or woodlands of significant historical, commemorative or conservation value.	Light green
Category B				
Trees of moderate quality and value, capable of making a significant contribution for at least 20 years.	Trees that might be A category but are downgraded due to impaired condition such as remediable defects including poor past management and minor storm damage.	Trees present in such numbers or in groups or woodlands such that they form distinct landscape features, attracting a higher rating than they might as individuals, e.g. moderate quality trees in avenues with other A category trees, or trees that make little contribution to the wider area outside the site.	Trees with clearly identifiable conservation or other cultural benefits.	Mid blue
Category C				
Trees of low quality and value, currently in adequate condition to remain until new planting could be established [useful life of at least 10 years] Trees under 150mm diameter	Trees not qualifying in higher categories	Trees in groups or woodlands but without this giving them significantly greater landscape value and/or trees offering temporary screening.	Trees with limited conservation or other cultural benefit.	Grey
	NOTE: While C category trees will not usually be retained where they would impose a significant constraint on development young trees with a stem diameter of less than 150mm diameter should be considered for relocation.			

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Root protection areas [RPAs] – BS5837:2005

These are normally set out and enclosed by protective fencing, generally sectional welded mesh panels anchored firmly to scaffolding or similar supports.

This is calculated as below:

Single trunked trees
An area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m

Multiple trunked trees [from below 1.5m]
An area equivalent to a circle with a radius 10 times the diameter of the trunk just above the root flare. Where there is not a clear single trunk at any height either 1) the crown spread is used or 2) 12 x the diameter of a single trunk with the same cross sectional area as the combined trunks of the tree, measured at 1.5m.

This is capped at 707m^2, which is equivalent to a circle with a radius of 15m or square with sides of about 26m [equivalent to a tree with a diameter of 1250mm].

This is to be assessed by an arboriculturalist taking into account the following factors. It may change its shape but not the overall area, whilst still providing adequate protection to the root system.

- The likely tolerance of the tree to root disturbance based on factors such as species, age and condition and the presence of other trees. [For individual open grown trees it may be acceptable to offset the distance up to 20% in one direction]
- 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
- The soil type and structure
- Topography and drainage.

[The previous version of the Standard contained a table giving distances between the tree and the fencing based on the size, age and vigour of the tree. Alternatively, if arboricultural advice was not available, fencing was to be erected under the edge of the crown or at a radius equal to half the height]