

Simon Pryce Arboriculture

Report

Client: London Borough of Camden

Site: Gospel Oak Primary School, Mansfield Road, Gospel Oak, London, NW3 2JB

Subject: Tree survey in connection with proposed work at the front entrance


Inspection date: 14 January 2016

Report date: 1 February 2016

Reference: 15/119

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1 Introduction

- 1.1 This report has been prepared on the instructions of Hayhurst & Co, the architects acting for the London Borough of Camden in respect of a proposal to modify the entrance to Gospel Oak Primary School.
- 1.2 I have been asked to inspect trees growing on and near the site and to prepare a report on them, as set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction.
- 1.3 This report is based on a site visit and survey on 14 January 2016. 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 descriptions and other relevant information are contained in the attached schedule and they are shown on the attached plans, based on originals prepared by Hayhurst & Co.

2 Background

The site

- 2.1 The school is on the north side of Mansfield Road and is a modern low-rise building set back from the road and slightly higher. The area with which this survey and report are concerned is the grassed strip of land approximately 8.5m deep by 35m long between the front of the building and the road.
- 2.2 The school is in Mansfield Conservation Area.

Proposal

- 2.3 This is shown on the drawings produced by Hayhurst & Co and involves extending the left hand (west) end of the building forward, building an access ramp that ascends to the entrance from left to right across the grass in front of the building and changes just inside the front boundary, which is currently a low wall topped by railings.

3 Trees

- 3.1 There are assorted trees and shrubs in front of the building, but the most significant ones are two groups of four birches. Of these trees 3 - 6 are mature specimens in a closely planted group at the left hand end of the site. They have grown at varying rates and competition between them has led to no.3 becoming dominant, so 4 and 5 lean outwards and 6 is severely suppressed. Trees 3 - 5 have all been crown reduced in the past and grown on.
- 3.2 Trees 9 - 11 are near the middle of the grass strip and are younger birches planted slightly farther apart. They are not quite as prominent as the older ones but are in better condition.
- 3.3 The only other significant trees are 12 and 13, both wild service trees growing a short distance to the east of the younger birches and probably planted at the same time. These two are nursery stock, but they are a native species that is still present in local woodland.

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 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. This recommends that root protection areas [RPAs] are established round retained trees and that no ground work takes place within them unless measures are taken to safeguard the trees. RPAs are normally enclosed by suitable fencing such as weld mesh sections supported by scaffold poles driven into the ground.

Root protection areas

- 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 measured at 1.5m above ground. The grass strip is contained by the building and surrounding features but most of the trees are relatively small, so circular RPAs, as shown on the plans, will be a realistic representation of actual root spread.

Implications for this case

- 4.4 The proposal involves major ground work and level changes in the central and right hand parts of the grass strip, so trees 7, 8, 9, 11, 13, 14 and 15 would need to be removed as they would be directly under the ramps. That leaves 10 and 12, but they would be in the narrow angle between the two ramps. They are young and healthy, but would still be very vulnerable to indirect damage from the work, even if measures were taken to protect them, so it would not be feasible to retain them.
- 4.5 These trees make a positive contribution to the site and immediate surroundings but that is collective, as none are very large or mature. The most practical option therefore is to remove trees 7 - 15 before work starts. Tree 7 is small enough to be transplanted easily and planting new heavy standard or semi mature trees would rapidly mitigate the loss of the existing ones.
- 4.6 The four birches comprising group 3 - 6 are larger and more prominent apart from 6, which has been severely suppressed by the others and would be recommended for removal in any event. It has not affected the other three trees, but they have grown together as a group, so they all lean away from each other and are not good individuals, particularly 4 and 5. The work does not directly involve removing trees 3 - 5, but 5 is close to the top of the ramp and they all have significant amounts of ground work taking place within their RPAs. The new surface will be permeable, but will cover most of their rooting area and will involve some removal of the upper layers of the soil to install. The cumulative effect of this on them will be severe. As a guide the incursions of new structures into the RPAs are below. This does not allow for level changes or the new surface.

Tree no.	RPA area	Incursion	%	Comments
3	54 m ²	27 m ²	50%	Well beyond tolerable limits
4	29 m ²	12 m ²	41%	Well beyond tolerable limits
5	14 m ²	0.6 m ²	4%	Low but does not allow for hard surface and level changes. Tree not viable except as part of the group.

- 4.7 The birches are mature, not naturally long lived and become much less resilient as they age, so the work would hasten their natural decline, if it was not immediately fatal. In order to lessen that risk it would be necessary to shorten the ramps and reduce the work at that end of the building. There appears little benefit in doing that simply in order to enable them to be retained for the short period they have left. A better long term option would be replacement, possibly by expanding the new planting bed and planting in that.

- 4.8 Birches grow well and look good in groups, but there is also the option of planting a smaller number of larger growing trees that would develop into more prominent individual specimens.

5 Conclusions

- 5.1 The trees make a positive contribution to the site, but most are young and none of them are very large or outstanding specimens, so the effect is collective rather than individual.
- 5.2 The construction of the ramps would involve the direct loss of some of the trees in the middle and right hand part of the site and the others there would be at a high risk of being damaged by the work. These are all relatively small young specimens and new planting with suitable replacements would rapidly mitigate the loss.
- 5.3 The four birches at the left hand end are farther from the main work area, but the cumulative effect of the new structures and surfaces on them will be severe, they are already aging and this would hasten their natural decline. There appears little benefit in any major modification to try to keep them for a few more years. A better long term option would be to replace these as well.



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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							
The trees are described in order, as shown on the site plan, starting at the western end of the site and going towards the east.													
1	Assorted shrubs	MA/N	7	1.5	3	3	3	m/s	-	-	0	Dense group including pyracantha, elder and spindle. Provide good screening but are encroaching on the building.	C2
2	Assorted shrubs	MA/N	5	2	2.5	2	1	m/s	-	-	0	Similar dense bushy group, merging with the other one. Also provides some screening.	C2
3	Birch <i>Betula pendula</i>	M/N	13	4.5	1	5	5	340	4.1	54	4	Dominant tree of the group, has been reduced in the past and grown on. Has some signs of decay in the pruning points but fair otherwise.	C2
4	Birch <i>Betula pendula</i>	M/N	11	0.5	3.5	2.5	2	250	3.0	29	5	Also reduced and grown on. Leans away from the previous one due to growing close to it, otherwise fair.	C2
5	Birch <i>Betula pendula</i>	M/L	9	2.5	3	2.5	0.5	170	2.1	14	4	Reduced in the past and growing on, also leans and is being suppressed by the others.	C2
6	Birch <i>Betula pendula</i>	N/L	6	0	2.5	2	0.5	140	1.7	9.3	3	Suppressed severely by the others and declining, does not contribute to the group and has no real potential to improve.	U
7	Ginkgo <i>Ginkgo biloba</i>	Y/N	4.5	1	1	1	1	50	0.6	1	1	Young tree still attached to its planting stake. Has good potential and is small enough to transplant without difficulty.	C2
8	Birch <i>Betula pendula</i>	Y/N	10	2	2.5	2	2	130	1.5	7.3	2.5	Healthy young tree.	C2
9	Birch <i>Betula pendula</i>	Y/N	10	2	2	2	2	110	1.3	5.6	2.5	Healthy young tree.	C2
10	Birch <i>Betula pendula</i>	Y/N	10	2	2	2	1.5	120	1.5	6.6	2.5	Healthy young tree.	C2
11	Birch <i>Betula pendula</i>	Y/N	7	2	2	2	2	100	1.2	4.4	2	Establishing more slowly than the others but is sound and healthy.	C2
12	Wild service tree <i>Sorbus torminalis</i>	Y/N	6	1.5	1.5	1.5	1.5	80	1.0	2.9	1.8	Healthy young specimen.	C2
13	Wild service tree <i>Sorbus torminalis</i>	Y/N	9	2.5	2.5	2.5	2.5	160	1.9	11.5	2	Has a very dense crown but is a healthy young tree.	C2
14	Pear <i>Pyrus</i> variety	Y/N	3	1	1.5	1	1	50	0.6	1	0	Small bushy specimen. Grafted onto quince root stock which is growing up through it.	C2
15	Apple <i>Malus</i> variety	Y/N	2.5	2.5	2	1	2.5	50	0.6	1	0	Uprooted but part of the root system is still in the ground. Still alive but has little potential.	C2
16	Elder <i>Sambucus nigra</i>	M/N	8	1.5	3	1.5	3	190	2.3	16	4	Growing in the corner of the building and has been pollarded and recut regularly to maintain clearance.	C1

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				N	S	E							
17	Purple cherry plum <i>Prunus pissardi</i>	M/N	9	1.5	5	5.5	3	250	3.0	29	4	Has been reduced in the past and grown on. Leans towards the road but appears sound and well rooted. Some sucker shoots at the base.	CI



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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.
Over mature	[OM]	Declining and/or approaching the end of its 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.

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

Trees for removal		Colour code
Category U	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	Red
	<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><i>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>	
Trees for retention		
Category and definition		Colour code
Criteria – sub categories		
1 – mainly arboricultural values		3 – mainly cultural / conservation values
Category A	Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees, groups or woodlands of significant historical, commemorative or conservation value. (e.g. veteran trees or wood -pasture)
Category B	Trees of moderate quality with an estimated remaining life expectancy at least 20 years.	Trees with material conservation or other cultural benefits.
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	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