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REPORT ON INSPECTION OF TREES

AT

PURBROOK PARK SCHOOL
PARK AVENUE
PURBROOK
WATERLOOVILLE
HAMPSHIRE

by

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1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. received instructions through M H Architects to undertake an inspection of trees located at Purbrook Park School, Park Avenue, Purbrook, Waterlooville, Hampshire. The purpose of the inspection was to produce a base inventory of the tree stock, advise on any safety issues, calculate BS root protection areas and produce a Tree Constraints Plan that can be used for advising potential development layouts.
- 1.2 The trees were inspected on the 8th and 14th of April 2014 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.
- 1.3 At the time of reporting checks had been made with Havant Borough Council and email confirmation received that the site is not located within a Conservation Area and that there are no Tree Preservation Orders on any of the trees.

2. GENERAL SITE DESCRIPTION

- 2.1 Purbrook Park School is located on the east side of Park Avenue with its eastern boundary bordering The Dale, with a second access point. The main access comprises a surfaced in and out drive with areas of parking. In all directions the site is bounded by residential properties and gardens.
- 2.2 The site is very approximately 'L' shaped with ground levels generally falling from the north end of the site.
- 2.3 The school buildings are to the north of the site and formed around an old Manor House comprising a mix of styles, ages and floors. Occupying the centre and south of the site are tree lined playing fields with a multi use surfaced area to the east.

3. SCOPE OF TREE SURVEY

- 3.1 The trees and areas included on topographic site survey plans produced by Terrain Land & Architectural Surveyors & Encompass Surveys were included in the inspections. Trees outside of these supplied plans have not been inspected. Where trees were missing from the supplied surveys their approximate locations have been added. For groups/linear features of trees very approximate general locations have been added.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Only those trees within the site boundary could be basally inspected, with the structural integrity of the trees located outside the site unconfirmed. Each tree was inspected to the requirements of Section 4.4 of BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".
- 4.2 The tree survey followed the numbered sequence from 1 to 114 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J 48.58/01 Sheets 1 & 2 in Appendix 2. This drawing also includes crown spreads based on four compass points and BS calculated root protection areas.

- 4.3 The following categories of information were obtained for each tree. Separate detailed tree survey sheets are attached in Appendix 1, together with comprehensive explanatory sheets which cover the details of the categories listed below.

- (1) Tree reference number
- (2) Species
- (3) Height in metres
- (4) Stem count
- (5) Stem diameter or equivalent in millimetres
- (6) Branch spread in metres
- (7) Age class
- (8) Height of crown clearance in metres
- (9) Physiological condition
- (10) Estimated remaining contribution in years
- (11) Category grading
- (12) Structural condition
- (13) Preliminary management recommendations

- 4.4 Within the assessment of physiological condition and remaining contribution, a visual inspection of each tree was undertaken to assess the crown and stem for any weak structures, deadwood, hollows, forks or other defects that might affect its stability and safety. The base of each tree was also visually inspected, together with tapping and probing, to search for signs of root lifting, bark death or decay. Where stems were heavily ivy clad, no full assessment of structural integrity could be undertaken. Clearance of the ivy would be necessary for confirmation of tree condition.

5. RISK ASSESSMENT - INFORMATIVES

- 5.1 Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year round basis, such as footpaths, gardens and roadways. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could potentially cause physical damage to such structures.
- 5.2 Within the scope of any tree survey it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even healthy trees can suffer stem snap or windblow. There is also a well known propensity for mature trees to occasionally shed limbs for no discernible reason, even on calm days. Although relatively rare, limbs may occasionally be shed and this should be acknowledged as a risk that cannot entirely be mitigated.

6. RESULTS OF TREE INSPECTIONS

- 6.1 A total of 114 individual trees and groups were inspected representing a diverse range of ages and species. A number of the larger on and near off site trees, such as numbers T3, Holm oak and the cedars T73 and 74 represent landscaping to the original Manor House element of the school from at least the early 1800s. Ongoing landscaping since then, and particularly when the majority of the school buildings were constructed, has added significantly to tree numbers.

- 6.2 The majority of the trees around the boundaries of the playing fields have been planted since the school began, originally as screening for the children from the adjoining residential gardens. Much of this has developed on to form intensely crowded and dense groups with most of the low level screening lost due to inter tree shading out of branches.
- 6.3 Within the tree inspections a number of the trees were identified as being in a potentially dangerous condition and requiring surgery/felling to reduce hazards to static targets, pupils and adjoining properties/road users. Since the inspections two Lime trees within the school buildings complex have already been felled to abate immediate high level risks. The following section covers additional tree works recommended whether or not redevelopment works proceed.
- 6.4 Of the trees inspected, the following is a breakdown of the various numbers of trees and groups in each BS category.

BS Category	Tree No.	Sub Total
A	3, 73, 74, 88, 96, 99	6
B	1, 4, 6, 11, 15, 22, 24, 31, 32, 47, 50, 61, 62, 63, 69, 75, 76, 77, 78, 79, 80, 81, 82, 84, 85, 93	26
B/C	G91, G97	2
C	5, 7, 8, 9, 10, 12, 16, 17, 18, 19, 21, 23, 25, 26, G27, 29, 30, G33, 34, 35, 37, 38, 40, 41, 42, 44, 46, 48, 49, G52, 54, 55, 56, 57, 58, 59, 60, 64, 65, 70, 71, 72, 83, 86, G87, 90, G98, 100, 102, G103, G104, G105, 106, 109, 111, 112, 114	57
C/U	G45	1
U	2, 13, 14, 20, 28, 36, 39, 43, 51, 53, 66, 89, G92, G94, 95, 101, 107, 108, 110, 113	20
Felled	67, 68	2
	TOTAL	114

6.5 **Interpretation of table**

- Category A** Retention most desirable. Of high quality and value and in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
- Category B** Retention desirable. Of moderate quality and value and in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
- Category B/C** Groups of trees that include individuals of varying qualities that fall into the category B and C classifications.
- Category C** Could be retained – of low quality and value. Poor crown form, heavily asymmetric, large numbers of similar species/size. Currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm.

Category C/U

Trees that would be included in category C but have structural faults, areas of decay, etc. that require more detailed investigations or climbing inspections to ascertain whether or not they can be safely retained. Groups that include dead/dying/dangerous individuals.

Category U

Trees for removal. Dead/dying/dangerous trees due to structural defects, fungal decay or root plate uplift. Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

7. TREE WORK RECOMMENDATIONS

- 7.1 The following trees have been identified as having structural defects or as being in declining health/dangerous condition where tree works/removal are recommended whether or not the redevelopment of the site occurs.

Tree no.	Species	Works recommended
2	Laburnum	Request owners to fell.
10	Scots Pine	Deadwood crown.
20	Sycamore	Consider felling.
22	Sweet Chestnut	Remove lowest S limb.
24	Sweet Chestnut	Remove lowest S limb.
25	Holly	Remove hung up dead limb to E.
28	Hazel	Fell.
36	Hawthorn	Fell.
G45	Sycamore	Fell if in ownership.
51	Elm	Fell.
66	Lime	Fell.
71	Sycamore	Consider overall crown reduction by one third.
81	Robinia	Remove torn out limb and tidy stub.
82	Norway Maple	Install brace in upper crown.
86	Ornamental Cherry	Raise crown to 2m over pavement or fell.
89	Common Oak	Ownership unclear. Fell or deadwood and reduce by one third and balance.
G91	Sycamore, Western Red Cedar	Fell Sycamore.
G92	5 No. Hornbeam	Fell all.
93	Common Oak	Deadwood crown.
G94	2 No. Hawthorn	Fell both.
95	Scots Pine	Fell.
G97	Sycamore, Thorn, Horse Chestnut, Ash	Potential to cut back heavily leaning stems/over extended limbs back towards boundary.

- 7.2 It should be noted that not all individuals within group descriptions have been inspected in detail as the purpose of the report was to produce a base inventory of trees in accordance with BS 5837:2012 requirements and not specifically a safety inspection. It is presumed that the school has a regular program of safety inspections in line with County Council policies.

8. BS CALCULATED ROOT PROTECTION AREAS (RPAs)

- 8.1 To provide an indication of the critical areas of root plate necessary for tree survival and longevity, BS 5837:2012 requires the calculation of RPAs for trees in the BS Categories A, B and C. Calculations are not made for Category U trees which will require removal on safety grounds within 10 years.
- 8.2 The table attached in Appendix 3 has been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS 5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs it is likely that the architecture of root systems will have been affected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations the indicated RPA circles should be used for guidance only within any redevelopment proposals.

9. SUMMARY

- 9.1 A total of 114 individual trees and groups were inspected covering a diverse range of species, sizes and ages, ranging from the early 1800s to the late 1990s/2000s. Of these trees two have already been felled on safety grounds and a further 22 trees are recommended for works whether or not any redevelopment occurs.
- 9.2 The Tree Constraints Plan produced provides guidance on the potential influence above and below ground elements of trees could have on any redevelopment proposals. Account should also be taken of future growth potential and shading of the trees particularly where located beyond the boundaries of the site.

Tim Laddiman
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Broad Oak Tree Consultants Ltd.

APPENDIX 1

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Middle aged - MA Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

CASCADE CHART FOR TREE QUALITY ASSESSMENT

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. - Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree.)			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial construction (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodland, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories	Trees present in groups or woodland, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits	GREY
NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation				

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
1	Horse Chestnut	17	1	c900	c7	6	5	8.5	M	2.5+	Unconfirmed	20-40	B	2	Twin stemmed at 2m. Crowded to E. No basal inspection as located in adjoining garden.	
2	Laburnum	4	Multi	150	0	3	2	1	Y	2+	Dead	-	U		Dead. Leaning S. Located in adjoining garden therefore no basal inspection.	Request owners to fell.
3	Holm Oak	21	Multi	<1800	c10	10	9.5	11.5	M	2+	Unconfirmed	40+	A	2	Multi stemmed near ground level and from under 3m. Several lower stem tear wounds. Heavily reduced back to S. in past. Located in adjoining garden therefore no basal inspection.	
4	Sycamore	15	1	c400	c3	4.5	5	1.5	M	4+	Unconfirmed	20-40	B	2	Crown raised in past. No basal inspection as located in adjoining garden.	
5	Sycamore	6	1	c150	c3	4	3	2.5	Y	2+	Unconfirmed	20-40	C	2	Suppressed. Leaning SE. No basal inspection as located in adjoining garden. Kinked lower stem.	
6	Monterey Cypress	17	1	c550	c5	2	3.5	3	M	7+	Unconfirmed	20-40	B	2	Crowded. High crown. Minor dieback. Located in adjoining garden therefore no basal inspection.	
7	Sycamore	13	1	c350	c10	3.5	3.5	2	M	3+	Unconfirmed	20-40	C	2	Crowded. Leaning SE. No basal inspection as located in adjoining garden.	

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					N	E	S	W								
8	Sycamore	13	1	c180	c6	6.5	2	2.5	Y	1+	Unconfirmed	10-20	C	2	Drawn up. Leaning N. Heavily crowded. Located in adjoining garden therefore no basal inspection.	
9	Monterey Cypress	16	1	c400	c5	3.5	3.5	2.5	M	1+	Unconfirmed	20-40	C	2	Crowded. Located in adjoining garden therefore no basal inspection.	
10	Scots Pine	17	1	c700	c3	3	4	3.5	M	8+	Poor	10-20	C	1	Slight crown thinning. High crown. Deadwood. Ivy clad therefore no basal inspection. Upper stem lean to S. Possible needle blight.	Deadwood crown.
11	Common Oak	16	1	c850	c7	5	5	1.5	M	5+	Unconfirmed	20-40	B	2	Ivy clad base therefore no basal inspection. Past crown raising. Crowded. Leaning NE. Multi stemmed at 6m. Lower stem epicormics.	
12	Monterey Cypress	9	1	c250	c4	1	3	4	Y	0+	Unconfirmed	40+	C	2	Crowded. Leaning N. Located in adjoining garden therefore no basal inspection.	
13	Monterey Cypress	18	1	c650	c5	1.5	4	3.5	M	5+	Poor	<10	U		Twin stemmed from 2.5m with long weak unions. Located in adjoining garden therefore no basal inspection.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
14	Monterey Cypress	7	2	c140	c1	1.5	3.5	0.5	Y	3+	Poor	<10	U		Located in adjoining garden therefore no basal inspection.	
15	Monterey Cypress	18	1	c700	c6	3	4	2	M	4+	Unconfirmed	20-40	B	2	Crowded. Located in adjoining garden therefore no basal inspection. Splayed upper crown.	
16	Monterey Cypress	14	1	c700	c5	6	4.5	2	M	2+	Unconfirmed	10-20	C	1	Crowded. Located in adjoining garden therefore no basal inspection. Upper crown dieback.	
17	Portugal Laurel	6	2	340	3	3	4.5	4.5	M	1.6+	Fair	20-40	C	2	Leaning W. Twin stemmed at 60cm. W. stem dominant. Crowded to N.	
18	Holly	8	4	260	c3	3	2.5	2	Y	1.5+	Fair	20-40	C	2	Four stems near ground level. Leaning S.	
19	Sycamore	9	1	210	3	2	1.5	1	Y	3+	Fair	40+	C	2	Leaning E.	
20	Sycamore	10	Multi	240	1.5	3	3	1	Y	3+	9	<10	U		Three stems near ground level. Squirrel damage.	Consider felling.
21	Rowan	8	1	190	c3	2.5	1.5	1.5	Y	1.3+	Fair	40+	C	2	Crowded. Becoming ivy clad.	
22	Sweet Chestnut	11	1	390	5	2	5	4.5	MA	4+	Good	40+	B	2	Crown raised in past. Wounding in upper surface on lowest limb to S.	Remove lowest S. limb.

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					N	E	S	W								
23	Cypress var.	5	1	c200	c2	2.5	2	1.5	Y	2.5+	Unconfirmed	40+	C	2	Leaning E. Topped at current height. Located in adjoining garden therefore no basal inspection.	
24	Sweet Chestnut	12	1	460	4.5	4	4.5	3	MA	5+	Good	40+	B	2	Crown raised in past. Base becoming ivy clad. Wounding in upper surface on lowest S. limb. Wounding to large surface root to SE.	Remove lowest S. limb.
25	Holly	9	3	360	2	3.5	3.5	4.5	MA	1.6+	Fair	20-40	C	2	Three stems near ground level. One dominant. Becoming ivy clad.	Remove hung up dead limb to E.
26	Lawson Cypress var.	6	Multi	c250	2	2	2	2	MA	1.5+	Unconfirmed	20-40	C	2	Located in adjoining garden therefore no basal inspection. Densely multi stemmed from under 1m.	
G27	Cypress	<5	1	<150	<2	<1	<3	<1	Y	1.3+	Unconfirmed	20-40	C	2	Screen planting located in adjoining garden therefore no basal inspection. Recently topped. Long limbs to S.	
28	Hazel	5	1	c100	0.5	3	3	1	Y	1.8+	Unconfirmed	<10	U		Crowded. Heavily ivy clad therefore no basal inspection. Dieback.	Fell.
29	Cypress var.	6	1	c200	c2	2	2	2	Y	1.3+	Unconfirmed	40+	C	2	Located in adjoining garden therefore no basal inspection.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
30	Ash	9	2	c280	c4	4	4	3	Y	1+	Unconfirmed	20-40	C	2	Twin stemmed from under 1m. Topped at circa 3m-4m in past. Located in adjoining garden therefore no basal inspection.	
31	Lime	18	1	c1000	c4	c4	c5	c4	M	4+	Unconfirmed	20-40	B	2	Located in adjoining garden therefore no basal inspection. Heavily reduced in last three years. Multi stemmed at 6m-8m.	
32	Sycamore	14	1	c300	c3	c4	c4	c4	MA	3+	Unconfirmed	20-40	B	2	Ivy clad base and located in adjoining garden therefore no basal inspection.	
G33	Yew	<4.5	1	<80	<2.5	c1.5	1	1.5	Y	0+	Unconfirmed	40+	C	2	Screen hedge side clipped in past to W. Located in adjoining garden therefore no basal inspection.	
34	Hawthorn	8	2	c250	3	3	3	3	M	2+	Unconfirmed	20-40	C	2	No basal inspection as no access. Twin stemmed at 1.2m. Topped at 5m in past.	
35	Hawthorn	7	1	c160	2	c3	1	2.5	M	3+	Unconfirmed	20-40	C	2	No basal inspection as no access. Crowded. High crown. Topped at circa 5m in past.	
36	Hawthorn	7	1	c130	1	c.1	0.5	1.5	M	3+	Poor	<10	U		Heavily crowded. No basal inspection as no access. Topped a circa 5m in past. Appears dead.	Fell.

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
37	Common Oak	12	1	c300	5	c5	0	3	Y	4+	Unconfirmed	10-20	C	1	No basal inspection as no access. Heavily crowded. Pollarded at 6.5m in past. Crown raised.	
38	Sycamore	12	1	c250	3	c4	1	0.5	Y	3+	Unconfirmed	10-20	C	1	No basal inspection as no access. Heavily crowded. Pollarded at 6.5m in past. Crown raised.	
39	Sycamore	12	1	c400	1.5	0.5	2.5	4.5	MA	5+	Unconfirmed	<10	U		No basal inspection as no access. Heavily crowded. Pollarded at 6.5m in past. Crown raised. Decay of pollard points.	
40	Sycamore	12	1	c200	2	c1.5	2.5	4	Y	4+	Unconfirmed	40+	C	2	No basal inspection as no access. Crowded to E.	
41	Elm	12	1	c250	3	c4	4	3	Y	3+	Unconfirmed	10-20	C	1	No basal inspection as no access.	
42	Common Oak	11	2	210	0.5	c2	2	4	Y	4+	Unconfirmed	20-40	C	2	Twin stemmed at 1m. No basal inspection as no access. Crowded.	
43	Sycamore	12	1	c350	4	c5	2.5	3.5	MA	4+	Poor	<10	U		Pollarded at 5m-6m in past with decay. Ivy clad stem therefore no basal inspection.	
44	Common Oak	12	1	c200	2	c6	1	1	Y	5+	Poor	10-20	C	1	Pollarded at circa 5m in past. Heavily crowded. Crown leaning E. Ivy clad therefore no basal inspection.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
G45	Sycamore	<13	Multi	<200	3	c5	2	2	Y	3+	Variable	0-20+	C/U	1	Ownership unclear. Cluster of stems. Crowded. Several decayed at base.	Fell if in ownership.
46	Common Oak	15	1	490	9	c6	2.5	4	MA	3.5+	Fair	40+	C	2	Suppressed. Contorted crown to N. Past crown raising.	
47	Sycamore	16	1	450	3	3.5	2.5	2.5	M	6+	Fair	20-40	B	2	High crown. Recent branch loss to N.	
48	Hawthorn	5	2	140	3.5	1	1.5	2	MA	0+	Fair	20-40	C	2	Twin stemmed from under 1m. Ivy clad. Overtopped.	
49	Hawthorn	7	1	150	3	c3	1	3	MA	1.5+	Fair	20-40	C	2	Overtopped. Ivy clad. Crowded.	
50	Common Oak	15	1	c400	3.5	c6	6.5	5	MA	1.2+	Unconfirmed	40+	B	2	No basal inspection. Ivy clad.	
51	Elm	11	1	c160	1	1	1	0	-	8+	Dead	-	U		Dead. Risk of falling into adjoining garden.	Fell.
G52	Hawthorn	<9	1	<250	3	3	2	3	MA	1+	Variable	40+	C	2	Cluster of stems. Ivy clad.	
53	Hawthorn	7	2	280	2	c3.5	2	2	MA	2+	Poor	<10	U		Crown dieback. Twin stemmed at 1.3m. Multi stemmed at 2m.	
54	Sycamore	9	2	210	1.5	c3.5	3	2	Y	2+	Fair	40+	C	2	Twin stemmed near ground level. Crowded.	
55	Lawson Cypress	8	1	c250	2	c2.5	2	1.5	Y	2+	Unconfirmed	40+	C	2	Ownership unclear. Stem wounding. Growing over shed. No basal inspection.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
56	Sycamore	13	1	430	4.5	4.5	3.5	4	MA	2+	Poor	10-20	C	1	Localised compaction and wounding to surface roots. Poor upper crown growth.	
57	Hawthorn	5.5	3	140	3	2	2	1.5	MA	0.5+	Fair	20-40	C	2	Multi stemmed near ground level. Heavily ivy clad.	
58	Sycamore	13	2	450	4	5	1	4	MA	3+	Fair	10-20	C	1	Twin stemmed at 50cm. Potentially weak join. Heavily crowded to S/SE.	
59	Sycamore	13	2	500	3.5	5.5	2	5	MA	3+	Fair	20-40	C	2	Twin stemmed at 50cm. One stem dominant. Crowded to S. Crown lifted,	
60	Hawthorn	6	1	160	3.5	4	2.5	2.5	MA	0.5+	Fair	40+	C	2	Overtopped. Twin stemmed at 1.7m.	
61	Lime	18	1	780	2.5	4	7	2	M	2+	Fair	20-40	B	2	Basal epicormics pruned back. Twin stemmed at 2m with potentially weak join. Crowded. Leaning E. Pruned in last 2-3 years.	
62	Lime	18	1	700	4	2.5	5	2.5	M	3.5+	Fair	20-40	B	2	Ground compaction. Heavily reduced in last few years. Basal epicormics pruned back. Several large wounds with decay to S. below 4m.	
63	Lime	18	1	670	3.5	2.5	4.5	3	M	4+	Fair	20-40	B	2	Ground compaction. Basal epicormics cut back. Crown lifted an heavily reduced in past three years.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
64	Sorbus sp.	4.5	1	140	2	2	1.5	2	Y	2+	Fair	20-40	C	2		
65	Rowan	5.5	1	150	2	1	0.5	1.5	Y	2+	Poor	10-20	C	1	Surface root wounding. Poor growth.	
66	Lime	8	1	310	3	4.5	4.5	3	Y	3+	Poor	<10	U		Crown raised in past. Surface root wounding. Weak limb unions.	Fell.
67	Lime	Felled														
68	Lime	Felled														
69	Sycamore	15	1	720	5.5	5	4.5	5	M	2.5+	Fair	20-40	B	2	Localised intense compaction and surface root wounding. Lower stem wounding to W.	
70	Western Red Cedar	18	1	c600	3	5.5	2.5	c4	M	1.5+	Poor	10-20	C	1	Ivy clad lower stem. Thin upper crown.	
71	Sycamore	15	Multi	730	4	7	5.5	c6	M	3+	Fair	20-40	C	1	Three stems near ground level with central stem stunted. Past crown lifting and ivy severance. Localised decay at base to W. Potentially weak unions.	Consider overall crown reduction by one third.
72	Western Red Cedar	15	1	c350	2	3	0.5	1	MA	3+	Poor	10-20	C	1	Crowded to S. Thin foliage. Heavily ivy clad therefore no basal inspection. Leaning N.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
73	Cedar	21	1	1720	7	11	13	5	V	6+	Good	40+	A	1+2	Extensive past surgery with removal of large lower limbs and over building to S. Decay in several. Slight lean to E.	
74	Cedar	22	1	1260	12	12	3	5.5	V	10+	Good	40+	A	1+2	Bee nest in decayed pruning wound at 6m to NW. Crowded to S. Past crown raising and dead wooding. Minor dieback.	
75	Horse Chestnut	9	1	330	5	5	4	4.5	Y	1.8+	Good	40+	B	2	Twin stemmed at 2.2m.	
76	Horse Chestnut	9	1	360	5	4.5	4.5	5.5	Y	1.8+	Good	40+	B	2		
77	Horse Chestnut	8	1	320	3.5	5	4	3.5	Y	1.8+	Good	40+	B	2		
78	Lime	18	1	970	5	4.5	4	3.5	M	3+	Fair	20-40	B	2	Heavily crown reduced in last three years. Dense basal epicormics. Slight lean to NE.	
79	Sycamore	10	1	270	2	2.5	3.5	3	Y	3+	Good	40+	B	2		
80	Yew	12	1	620	4	4	4	4.5	MA	1+	Good	40+	B	2	Three stems at 1.5m with central stem dominant. Decay in E. stem.	
81	Robinia	16	1	420	2.5	3	2	6	MA	5+	Fair	20-40	B	2	Recently torn out limb to N. Hung up in T80.	Remove torn out limb and tidy stub.

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
82	Norway Maple	14	1	450	3.5	3.5	4.5	3.5	MA	3.5+	Fair	20-40	B	2	Twin stemmed at 3m with potentially weak union. Slight lean to E.	Install brace in upper crown.
83	Corsican Pine	9	1	260	1	3	2.5	2.5	Y	1.4+	Poor	20-40	C	2	Heavily crowded to N.	
84	Yew	7.5	1	340	4.5	3.5	3.5	3.5	MA	1+	Good	40+	B	2	Crowded to S.	
85	Yew	7	1	550	4.5	5.5	5	6	MA	1.3+	Good	40+	B	2	Twin stemmed from ground level.	
86	Ornamental Cherry	3.5	1	150	4.5	3	3.5	4.5	Y	1+	Poor	10-20	C	1	Leaning heavily W. Low crown.	Raise crown to 2m over pavement or fell.
G87	Robinia	<5	Multi	<100	4	0.5	2	3.5	Y	1+	Poor	10-20	C	1	Suppressed. Self seeded. Low quality trees.	
88	Beech	20	1	860	6	6.5	6.5	4	M	3+	Good	40+	A	2		
89	Common Oak	14	1	c850	4.5	c4	6	6	M	4+	Poor	<10	U		Ivy clad base therefore no basal inspection. Extensive crown dieback and deadwood.	Ownership unclear. Fell or deadwood and reduce by one third and balance.
90	Pine	8	1	240	2	3.5	2.5	1.5	Y	2+	Fair	20-40	C	2	Lower stem wounding. Slight lean to E.	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
G91	Sycamore, Western Red Cedar	<20	1/Multi	<600	<4	<6	<4	<4	M/MA	2+	Variable	10-40+	B/C	1	Northern most Sycamore badly squirrel damaged. No basal inspection or full inspections due to dense undergrowth/ivy. Dieback in upper crowns of Western Red Cedar.	Fell Sycamore
G92	5no. Hornbeam	<12	1	<400	<4	<6	<5	<5	MA	2+	Poor	<10	U		Several twin stemmed from under 2m. All with decayed wounds. Squirrel damage and weak unions.	Fell all.
93	Common Oak	14	1	530	6	9	6	3.5	MA	2.5+	Fair	40+	B	2	Crowded to W. Slight lean to E. Deadwood.	Deadwood crown.
G94	2no. Hawthorn	<9	1	<230	4	1	3	3.5	MA	2.5+	Poor	<10	U		Suppressed. Ivy clad. Larger stem heavily decayed.	Fell both.
95	Scots Pine	12	1	640	0.5	8	3.5	0.5	M	5+	Poor	<10	U		Leaning heavily E. Lower stem wounding. Extensive deadwood. Woodpecker hole at 7m and upper limb wounding.	Fell.
96	Common Oak	17	1	590	5	9	4.5	c7	MA	5+	Good	40+	A	2	Minor deadwood.	
G97	Sycamore, Thorn, Horse Chestnut, Ash	<18	1	<600	<3	<8	<4	<4	MA	1+	Unconfirmed	10-40+	B/C	2	Variable row of trees located in adjoining gardens therefore no basal inspection. Several leaning heavily over boundary or with long end weighted limbs.	Potential to cut back heavily leaning stems/over extended limbs back towards boundary.

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
G98	Hornbeam, Pine, 2no. Ash	<10	1	<250	<2	<5	<3	<2	Y	1.5+	Variable	20-40+	C	2	Crowded trees. Two ash to S. of group better quality.	
99	Common Oak	16	1	1070	7.5	11	8.5	9	M	2+	Good	40+	A	2	Deadwood.	Deadwood crown.
100	Lime	8	1	250	3	3.5	2.5	2.5	Y	2+	Fair	40+	C	2	Heavily crowded.	
101	Horse Chestnut	6	1	160	2	2.5	1.5	0.5	Y	2+	Poor	<10	U		Crowded. Extensive lower stem wounding.	
102	Lime	4.5	Multi	190	3.5	3.5	3	0.5	Y	0+	Poor	10-20	C	1	Crowded. Multi stemmed from under 50cm with potentially weak unions.	
G103	Mixed Broadleaves	<12	1	<200	<5	<3	<2	<3	Y	0+	Variable	10-40+	C	2	Heavily crowded. Most developed to N.	
G104	Thorn, Field Maple	<10	1/Multi	<200	<3	<3	<3	<3	Y	0+	Variable	10-40+	C	2	Crowded. Drawn up slender stems. Ground disturbance within 1m to N.	
G105	Mixed Broadleaves	<10	1/Multi	<200	<3	<5	<3	<2	Y	0+	Variable	10-40+	C	2	Crowded linear group. Most multi stemmed. Cut back to W. in past couple of months.	
106	Red Oak	12	1	310	5.5	5.5	4	3	Y	3+	Fair	40+	C	2	Heavily crowded. Upcurved secondary stems.	
107	Sycamore	12	2	250	2	2.5	2.5	1	Y	5+	Poor	<10	U		Twin stemmed at 1m with weak unions. Drawn up high crown.	Fell.

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading		Structural condition	Preliminary management recommendations
					N	E	S	W								
108	Lime	12	Multi	440	4	3	4.5	2	Y	3+	Poor	<10	U		Multi stemmed from under 1.2m with weak unions and rising stems.	Fell.
109	Red Oak	12	1	260	3	4	3	1.5	Y	5+	Good	40+	C	2	Crowded. Twin stemmed at 3.5m.	
110	Lime	9	1	300	5	2.5	3	4	Y	2.5+	Poor	<10	U		Three stems at 2.5m with weak unions.	Fell.
111	Horse Chestnut	7	2	190	0.5	3.5	2.5	1.5	Y	2+	Poor	10-20	C	1	Twin stemmed near ground level. Crowded.	
112	Red Oak	9	1	200	4	4	1.5	1	Y	3+	Poor	40+	C	1	Heavily crowded.	
113	Lime	8	2	490	5	6	4.5	3.5	Y	2.5+	Poor	<10	U		Twin stemmed from 1.1m with weak union. Multi stemmed from under 2m with weak unions.	Fell.
114	Red Oak	8	1	320	4	4.5	4	3.5	Y	2.5+	Fair	20-40	C	2	Twin stemmed at 2m with potentially weak join. Becoming ivy clad.	

APPENDIX 2

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Ordnance Survey

PURBROOK PARK SCHOOL
PARK AVENUE
PURBROOK
WATERLOO VILLE
HAMPSHIRE

TREE CONSTRAINTS PLAN

T1 – T114 Tree numbers

BS Category of Condition

T3 BS Condition A

T1 BS Condition B

T5 BS Condition C

T2 BS Condition U

Root crown spread

BS Calculated root protection areas

The root protection areas have been calculated using the formulae set out in BS5837:2012, the formulae are reproduced in Schedule 4.6 in BS5837:2012. These are the Tree Constraints Plan. Where buildings, walls, services and hard paving, it is likely that the architecture of root systems will completely obstruct root on their depth, and the nature of the underlying soils. In the absence of a detailed investigation, the indicated RPA circles should be used to guide only within any development proposals.

DRAWING NO. J48.58/01
Sheet 1
Scale: 1:300 at A1
Added to by: NL
14/04/2014

T1 - T114 Tree numbers

T3	BS Condition A
T1	BS Condition B
T5	BS Condition C
T2	BS Condition U

The roof protection areas have been concluded using the measured stem diameters and the formula as described in Section 4.6 in BSS5337:2012. These are represented as basic circles on the Tree Consultants Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPA, it is likely that the architecture of roof systems will create additional microclimates to soils and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations, the indicated RPA circles should be used for guidance only within any redevelopment proposals.

APPENDIX 3

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

PURBROOK PARK SCHOOL, PARK AVENUE, PURBROOK, WATERLOOVILLE, HAMPSHIRE

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calculated radial equivalent root protection area (m.)	BS calculated total RPA (m ²)
1	Horse Chestnut	B	c.900	c.10.8	c.366
2	Laburnum	U	-	-	-
3	Holm Oak	A	<1800	15*	707
4	Sycamore	B	c.400	c.4.8	c.72
5	Sycamore	C	c.150	c.1.8	c.10
6	Monterey Cypress	B	c.550	c.6.6	c.137
7	Sycamore	C	c.350	c.4.2	c.55
8	Sycamore	C	c.180	c.2.2	c.15
9	Monterey Cypress	C	c.400	c.4.8	c.72
10	Scots Pine	C	c.700	c.8.4	c.222
11	Common Oak	B	c.850	c.10.2	c.327
12	Monterey Cypress	C	c.250	c.3	c.28
13	Monterey Cypress	U	-	-	-
14	Monterey Cypress	U	-	-	-
15	Monterey Cypress	B	c.700	c.8.4	c.222
16	Monterey Cypress	C	c.700	c.8.4	c.222
17	Portugal Laurel	C	c.340	c.4.1	c.53
18	Holly	C	260	3.1	30
19	Sycamore	C	210	2.5	20
20	Sycamore	U	-	-	-
21	Rowan	C	190	2.3	17
22	Sweet Chestnut	B	390	4.7	69
23	Cypress var.	C	c.200	c.2.4	c.18
24	Sweet Chestnut	B	460	5.5	95
25	Holly	C	360	4.3	58
26	Lawson Cypress var.	C	c.250	c.3	c.28
G27	Cypress	C	<150	<1.8	<10
28	Hazel	U	-	-	-
29	Cypress var.	C	c.200	c.2.4	c.18
30	Ash	C	c.280	c.3.4	c.36
31	Lime	B	c.1000	c.12	c.452
32	Sycamore	B	c.300	c.3.6	c.41
G33	Yew	C	<80	<1	<3
34	Hawthorn	C	c.250	c.3	c.28
35	Hawthorn	C	c.160	c.1.9	c.11
36	Hawthorn	U	-	-	-
37	Common Oak	C	c.300	c.3.6	c.41
38	Sycamore	C	c.250	c.3	c.28
39	Sycamore	U	-	-	-
40	Sycamore	C	c.200	c.2.4	c.18
41	Elm	C	c.250	c.3	c.28
42	Common Oak	C	210	2.5	20
43	Sycamore	U	-	-	-
44	Common Oak	C	c.200	c.2.4	c.18
G45	Sycamore	C/U	<200	<2.4	<18
46	Common Oak	C	490	5.9	109
47	Sycamore	B	450	5.4	92
48	Hawthorn	C	140	1.7	9

* RPA capped at 15m radius

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

PURBROOK PARK SCHOOL, PARK AVENUE, PURBROOK, WATERLOOVILLE, HAMPSHIRE

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calculated radial equivalent root protection area (m.)	BS calculated total RPA (m ²)
49	Hawthorn	C	150	1.8	10
50	Common Oak	B	c.400	c.4.8	c.72
51	Elm	U	-	-	-
G52	Hawthorn	C	<250	<3	<28
53	Hawthorn	U	-	-	-
54	Sycamore	C	210	2.5	20
55	Lawson Cypress	C	c.250	c.3	c.28
56	Sycamore	C	430	5.2	85
57	Hawthorn	C	140	1.7	9
58	Sycamore	C	450	5.4	92
59	Sycamore	C	500	6	113
60	Hawthorn	C	160	1.9	11
61	Lime	B	780	9.4	278
62	Lime	B	700	8.4	222
63	Lime	B	670	8	201
64	Sorbus sp.	C	140	1.7	9
65	Rowan	C	150	1.8	10
66	Lime	U	-	-	-
67	Lime	U	Felled		
68	Lime	B	Felled		
69	Sycamore	B	720	8.6	232
70	Western Red Cedar	C	c.600	c.7.2	c.163
71	Sycamore	C	730	8.8	243
72	Western Red Cedar	C	c.350	c.4.2	c.55
73	Cedar	A	1720	15*	707
74	Cedar	A	1260	15*	707
75	Horse Chestnut	B	330	4	50
76	Horse Chestnut	B	360	4.3	58
77	Horse Chestnut	B	320	3.8	45
78	Lime	B	970	11.6	423
79	Sycamore	B	270	3.2	32
80	Yew	B	620	7.4	172
81	Robinia	B	420	5	79
82	Norway Maple	B	450	5.4	92
83	Corsican Pine	C	260	3.1	30
84	Yew	B	340	4.1	53
85	Yew	B	550	6.6	137
86	Ornamental Cherry	C	150	1.8	10
G87	Robinia	C	<100	<1.2	<5
88	Beech	A	860	10.3	333
89	Common Oak	U	-	-	-
90	Pine	C	240	2.9	26
G91	Sycamore, Western Red Cedar	B/C	<600	<7.2	<163
G92	5no. Hornbeam	U	-	-	-
93	Common Oak	B	530	6.4	129
G94	2no. Hawthorn	U	-	-	-
95	Scots Pine	U	-	-	-

* RPA capped at 15m radius

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT

PURBROOK PARK SCHOOL, PARK AVENUE, PURBROOK, WATERLOOVILLE, HAMPSHIRE

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calculated radial equivalent root protection area (m.)	BS calculated total RPA (m ²)
96	Common Oak	A	590	7.1	158
G97	Sycamore, Thorn, Horse Chestnut, Ash	B/C	<600	<7.2	<163
G98	Hornbeam, Pine, 2no. Ash	C	<250	<3	<28
99	Common Oak	A	1070	12.8	515
100	Lime	C	250	3	28
101	Horse Chestnut	U	-	-	-
102	Lime	C	190	2.3	17
G103	Mixed Broadleaves	C	<200	<2.4	<18
G104	Thorn, Field Maple	C	<200	<2.4	<18
G105	Mixed Broadleaves	C	<200	<2.4	<18
106	Red Oak	C	310	3.7	43
107	Sycamore	U	-	-	-
108	Lime	U	-	-	-
109	Red Oak	C	260	3.1	30
110	Lime	U	-	-	-
111	Horse Chestnut	C	190	2.3	17
112	Red Oak	C	200	2.4	18
113	Lime	U	-	-	-
114	Red Oak	C	320	3.8	45

* RPA capped at 15m radius