



Arboricultural Survey and Planning Integration Report

at

Land at The Groves,
Bower Mount Road,
Maidstone,
Kent.
ME16 8AX

14th December, 2017





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ARBORICULTURAL REPORT

LOCATION	Land at The Grove Residential Home, Bower Mount Road, Maidstone, Kent, ME16 8AX	REF: AR/2964a/jq
CLIENT	Mr R. Oliver, Smartblade Ltd.	DATE OF REPORT 14 th December, 2017
REPORT PREPARED BY	J. Quaife, AA Registered Consultant Dip.Arb.(RFS), F.Arbor.A, CEnv.	DATE(S) OF INSPECTION 16 th November, 2017
SURVEY INSPECTOR(S)	J. Quaife, AA Registered Consultant Dip.Arb.(RFS), F.Arbor.A, CEnv.	SHEET No. 1 of 9

LOCAL AUTHORITY	Maidstone Borough Council
CONTACT	Arboricultural Officer (MBC - 01622 602000)

Please note that abbreviations introduced in [square brackets] are used throughout the report.

INSTRUCTIONS

Issued by – Mr R. Oliver

TERMS OF REFERENCE – To survey the subject trees in order to assess their general condition and to provide a planning integration statement for the proposed development that safeguards the long term well being of the retained trees in a sustainable manner.

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Summary

The proposal is to construct three houses in the eastern part of the grounds of The Groves, an area which is of low usage to the facility. A new entrance and drive is to be created near the eastern end of the road frontage and the development will not have any adverse impact upon The Groves.

Of the 13 trees surveyed, 8 trees are to be removed, and while this may seem a high proportion numerically, they are in the centre of the site and the peripheral trees and those on the adjacent Care Home Site are retained, and so the landscape impact is small.

The retained trees will be protected in accordance with current standards and guidance, and there will be no post development pressure upon them.

The proposal is sound in terms of arboriculture and sustainability.

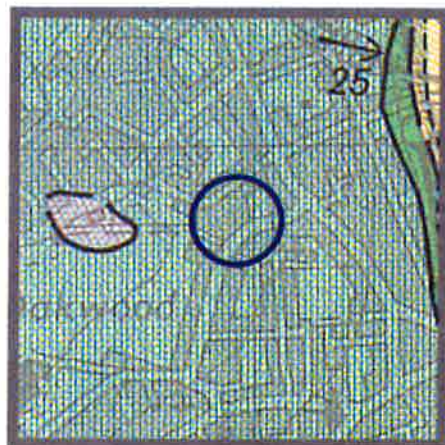
Survey Method

- 2.1 The survey was conducted from ground level.
- 2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- 2.3 No soil samples were taken.
- 2.4 The height of each subject tree was estimated visually/with a clinometer.
- 2.5 The stem diameters [SD] were measured in centimetres at 1.5 metres above ground level and otherwise in accordance with Annex C of BS5837.
- 2.6 The crown diameters were estimated visually.
- 2.7 The subject trees are listed at Appendix A and their positions are plotted at Appendix B derived from the supplied plans. Please note that the attached plan is for indicative purposes only.

The Site

- 3.1 The site is situated on the northern side of Bower Mount Road and comprises the eastern half of the property. The main building The Grove Residential Home is in the western half and has a vehicular and entrance and drive parallel with the western boundary (please note that since the topographical survey was carried out in 2001 the drive has been altered). There is an adjacent separate pedestrian entrance on the eastern side of the drive.
- 3.2 The land slopes downwards to the east and the grounds are arranged in a lower lawn terrace to the east of the main building and a lower part in the north-western corner. These areas are mostly lawn and the area immediately adjacent to the eastern elevations of the main building are at the same level with an embankment down to the main lawn.
- 3.3 The site is ringed in blue on this extract reproduced from the Geological Survey Drift Map, Sheet 288, Maidstone (by permission of the British Geological Survey ©NERC. All rights reserved). The indicated soil parent material shown blue/green is Hythe Beds of sandstone and sand

*C08/105-CSL British Geological Survey.
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- 3.4 The soil type is free-draining and non-shrinkable and generally stable. Generally it is a good medium for tree root growth and has some resistance to compaction, which is detrimental to tree roots. One would expect a normal root distribution where not impeded by the soil characteristics and subterranean obstructions.

Landscape Integration

6.1 Of the 13 trees surveyed 8 are to be removed. I have set out the trees to be retained and removed in Table 2 below.

Table 2. Tree Retention and Removal

Trees to be Retained +grade	Trees to be Removed +grade	U Grade Trees to be Removed
GRADE A (0)	GRADE A (0)	
GRADE B (2) T7 ^{TPO 8} , T8	GRADE B (1) T6 ^{TPO G1} ,	
GRADE C (3) T1 ^{TPO 3} , T11, T13	GRADE C (7) T2 ^{TPO 7} , T3, T4 ^{TPO G1} , T5 ^{TPO G1} , T9, T10, T12	
Total 5	Total 8	Total 0

6.2 The TPO trees to be removed T2, T3, T5, T5, T6, which are all of low public amenity value. Magnolia T6 is off the subject site but within the ownership and control of the applicant.

6.3 The guidance given in PPG TPO&CA says (in extract) that:

“... TPOs should be used to protect selected trees and woodlands if their removal would have a significant impact on the local environment and its enjoyment by the public.”

Given that the TPO was made in 1995 some 18 years ago, it is quite possible that the surrounding trees in the north-western corner have grown to shield these trees in TPO G1 to a marked extent and the landscape impact of the trees in the Group’s removal will as a consequence be limited.

6.4 In view of the retained peripheral hedging and trees there is little scope of planting new trees in Plots 2 and 3, but Plot 1 is to have the replacement tree for the removed beech planted close to the south-eastern corner (see Appendix C), and the road frontage wall will have a hedge planted of species yet to be agreed, but at this stage there are no firm landscape proposals.

6.5 The crown of the walnut T7 (TPO T8) is to be reduced on the southern side by approximately 2 metres so as to increase the separation from the northern elevation of the house at Plot 2 and provide more light and air to the rear garden. This pruning will not adversely affect the tree’s physiological well-being nor will it detract from its landscape presence.

Post Development Pressure

7.1 The concept of post development pressure is not that routine maintenance work to maintain clearances and the proportionality of trees is unacceptable. The term should more accurately be one of irresistible post development pressure where the spatial or physical relationship of a retained tree to a structure or feature demands pruning or removal that is inappropriate, but to which the local planning authority could not reasonably refuse consent.

- 8.6 The TPF can skirt around the trees along the northern boundary, and where the neighbouring beech T13 has its RPA over the boundary, although the removal of Hazel T12 will have primary root occupancy of the ground between the hedge and the eastern elevation of Plot 3, I recommend that this area of ground shaded pink at Appendix C is protected in accordance with Section 6.2.3 of BS5837 as shown at Appendix G to prevent ground compaction from the erection of scaffolding and other construction use.
- 8.7 Where scaffolding is to be erected in this zone it may be necessary to place the feet directly onto the ground to achieve a stable working structure. The collective footprint of the scaffolding feet on the soil will represent a minor proportion of the RPA and will not be a significant factor in terms of ground compaction.
- 8.8 TPF will be erected around the site of the replacement tree (see Appendix C), either to protect the planted tree, or to protect the ground into which it will be planted so that the soil structure is not compromised by construction activities of materials storage.
- 8.9 The surface water run-off and soil drainage has not been studied. However, due to the site topography and soil type, I do not foresee any detrimental effects on the trees in hydrological terms as a result of this development.
- 8.10 I have not been advised of the underground service routes, but it seems logical to suppose that they will run out of the site to the south. This being the case they can be routed so as to not compromise any RPAs. Clearly if any underground service routes should need to enter an RPA, the provisions of BS5837 and NJUG 4 should be employed and if necessary, further arboricultural advice sought.
- 8.11 Where existing or proposed drains pass within the root system of a tree (not just the RPA), technical advice must be sought to assess the root-tightness of joints. Modern compression joints do not reliably prevent root ingress and it may be necessary to upgrade them.
- 8.12 The hard landscaping operations are part of the construction works and where within RPAs will be planned and carried out within the construction phase tree protection measures.
- 8.13 The protection of the trees will also include recognition of other types of potentially damaging activities, such as the storage of materials (and other substances likely to be toxic to plants), parking, site-building requirements, and the use and parking of plant. Particular care and planning is necessary to accommodate the operational arcs of excavation and lifting machinery, including their loads, especially large building components such as beams and roof trusses. Operations like these have the potential to cause incidental damage and logistical planning is essential to avoid conflicts.

Conclusions

- 9.1 The trees to be removed are numerically the majority, but their removal will not cause any significant detriment to the character and appearance of the area.

10.2 The sequence of works should be as follows:

- i) initial tree works – tree removal and pruning for working clearances
- ii) installation of TPB
- iii) site preparation
- iv) installation of underground services
- v) construction of new drive including No-Dig surfacing
- vi) main construction, including hard landscaping
- vii) removal of TPB
- viii) soft landscaping including tree planting

The statements made in this Report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Quaife Woodlands cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice. The authority of this Report ceases at any stated time limit within it, or if none stated after two years from the date of the survey or when any site conditions change, or pruning or other works unspecified in the Report are carried out to, or affecting, the Subject Trees, whichever is the sooner.

Arboricultural Survey AR/2964a/jq - Land at The Grove Residential Home, Bower Mount Road

Appendix A

Pre	No	Species	Ht	SD	CrØ	CrB	AC	PC	SC	BS	Rad	RPA	Observations
T	1	Cherry	4	25	9	1.8	M	G	F	C	3.0	28	OFF SITE TPO T3
T	2	Holly	8.5	30	6	1.8	M	G	G	C	4.0	50	TPO T7 Crown asymmetric to the north.
T	3	Sallow	8.5	m	6	1.5	S	G	G	C	3.0	28	Forked x 4 at ground level, SDs 10,10,11,11. Crown asymmetric to the north.
T	4	Yew	8	35*	9	1.0	M	G	G	C	4.5	64	TPO G1 Ivy 65%.
T	5	Ash	13	45*	11 ¹	2.0	M	G	G	C	5.5	95	TPO G1 ¹ Radius to W 7m. Ivy 80%. Leans & asymmetric to the north-west.
T	6	Magnolia	8	35*	12	1.0	M	G	G	B1	4.5	64	OFF SITE TPO G1 Asymmetric to the west. Forked x 2 @ 1.5m. Ivy 50%.
T	7	Walnut	17	m	12	2.5	M	G	G	B1	9.0	255	TPO T8 Forked x 2 at 0.5m, SDs 51/50.
T	8	Beech	9	<20*	5	2.5	S	G	G	B1	2.5	20	OFF SITE
T	9	Elder	5	12*	4	0.5	S	G	G	C	2.0	13	
T	10	Elder	6	15	5	1.5	S	G	G	C	2.0	13	
T	11	Monterey Cypress	16	38*	7	2.5	M	G	G	B1	5.0	79	
T	12	Hazel	8	m	7	1.0	M	G	G	C	2.5	20	Coppice.
T	13	Beech	13	24*	10	2.0	M	G	F	C	3.0	28	OFF SITE. Asymmetric to the north.

Appendix C

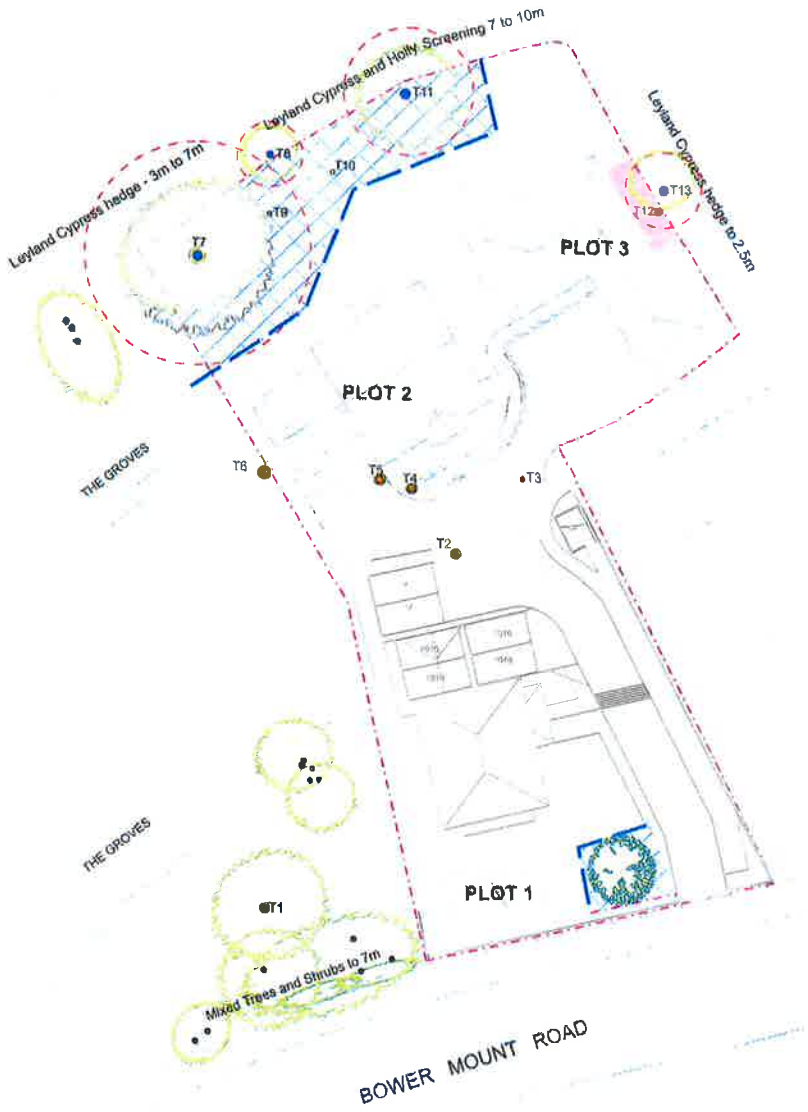
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Land at The Grove Residential Home, Bower Mount Road, Maidstone, Kent, ME16 8AX

Site Plan - Proposed Layout with Tree Protection Measures

Scale 1:400 approximately @ A3 14th December, 2017

*Scaling accuracy is sufficient for planning purposes but this drawing should not be used for construction
This plan is drawn in colour so monochrome reproduction may be unreliable*



	T18	Retained Tree
	T10	Retained TPO Tree
	T8	Removed Tree
	T6	Removed TPO Tree
		Root Protection Area
		Tree Protection Fence CONSTRUCTION
		Construction Exclusion Zone
		Ground Protection
		Proposed New Path
		Proposed New Drive
		Proposed New House
		Indicative crown footprint after pruning
		Consented Replacement Tree for removed Beech T10 - TPO T6

BS5837:2012 (Paragraph 4.6.1)
Root Protection Area radii in ½ metre graduations



The ½ metre graduations of RPA radii have been calculated back to produce diameter dimensions, which in turn have been rounded down to the nearest centimetre. If the BS5837 multiplier factor is plotted on a graph it produces a straight gradient and if the ½ metre steps are plotted they are all above that line, thus ensuring that the RPA radii err on the generous side.

<i>Single Stem up to diameter (mm)</i>	<i>RPA Radius (m)</i>	<i>RPA (m²)</i>
1250	15.0	707
1210	14.5	660
1170	14.0	616
1120	13.5	573
1080	13.0	531
1040	12.5	491
1000	12.0	452
960	11.5	416
920	11.0	380
870	10.5	346
830	10.0	314
790	9.5	284
750	9.0	255
710	8.5	227
670	8.0	201
620	7.5	177
580	7.0	154
540	6.5	133
500	6.0	113
460	5.5	95
420	5.0	79
370	4.5	64
330	4.0	50
290	3.5	38
250	3.0	28
210	2.5	20
160	2.0	13

Extract from British Standard 5837: 2012 Trees in relation to design, demolition and construction - Recommendations

Ground Protection

6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- a) *for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*
- b) *for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c) *for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see 6.1).

6.2.3.5 In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

Scaffolding

Where scaffolding is to be erected within an RPA of a retained tree, it may be necessary to place the feet directly onto the ground to achieve a stable working structure. The collective footprint of the scaffolding footings on the soil will represent a minor proportion of the RPA and will not be a significant factor in terms of ground compaction.