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Arboricultural Implications Assessment and Method Statement



'Green Oaks', Barnham Road, Barnham

Arboricultural Implications Assessment and Method Statement

GREEN OAKS, BARNHAM ROAD, BARNHAM

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CONTENTS

No.	Title	Page
1	INTRODUCTION	3
2	SITE VISIT, DESCRIPTIONS AND SURVEY METHODOLOGY	5
3	ARBORICULTURAL IMPLICATIONS ASSESSMENT	7
4	SUMMARY OF THE IMPLICATIONS OF THE DEVELOPMENT ON TREES	12
5	ARBORICULTURAL METHOD STATEMENT	13
APPENDIX 1	Tree Protection Plan	17
APPENDIX 2	Tree schedule and inventory	18
APPENDIX 3	Root Protection Area (RPA) data	25
APPENDIX 4	Illustrative specification for tree protection barriers	27
APPENDIX 5	Illustrative specification for ground protection measures within Root Protection Areas (RPAs)	28
APPENDIX 6	BS 5837 (2005) – Assessment categories	29
APPENDIX 7	Qualifications and experience of Barrie Draper	30

1 INTRODUCTION

- 1.1 **Instruction:** I am instructed by Southcott Homes Ltd to survey the trees at 'Green Oaks', Barnham Road, Barnham and prepare an Arboricultural Implications Assessment (AIA) and Arboricultural Method Statement (AMS) to support a planning application on the site.
- 1.2 **Document disclosure:** I have been provided with a topographical survey, drawing TJK 1463. This shows the positions of the significant trees on or near the site, together with the existing buildings and other important features. I was also supplied with a copy of the proposed layout, drawing number 100063 01.
- 1.3 **Scope of report:** All my observations are of a preliminary nature and the tree survey was carried out from ground level without any investigations using invasive or diagnostic equipment. I was not able to fully view all the trees detailed in this report from all directions, as some are located on an adjacent private property. I have therefore confined observations of them to what was visible from within the site. I have not checked the accuracy of the positions of these trees as shown on the provided plans and I have estimated all dimensions unless otherwise indicated.
- 1.4 **The Tree Protection Plan (TPP):** This is included in Appendix 1, and is a composite drawing derived from the information provided. It shows the existing landscape features (from the land survey) in grey, and the proposed layout shown superimposed over the top in blue. This allows the relationship between the two to be clearly seen. The TPP has also been annotated to show proposed tree protection measures, and areas where there are activities in Root Protection Areas (RPAs), along with any tree management intentions.
- 1.5 **Qualifications and experience:** This report is based on my site observations, and I have come to my conclusions in the context of my experience as a former local government tree officer and a private practice arboricultural consultant. I have qualifications in both arboriculture and forestry, and details of these, together with a career summary are provided in Appendix 7.

- 1.6 **Ecological issues and statutory tree protection:** Providing guidance on ecological issues is not within my sphere of expertise. However, trees and other vegetation can often provide nesting, roosting and feeding opportunities for protected species. Therefore, before any tree work proceeds on site, I advise that appropriate advice is sought to see whether the trees to be removed are being utilised by any protected species.

At the time of writing, no checks have been made as to whether any of the trees discussed are covered by tree preservation orders, or whether the site is located in a conservation area. Therefore, any person intending to carry out any operations involving trees (before a formal planning consent is issued) should consult the council before any works are carried out.

2 SITE VISIT, DESCRIPTIONS, OBSERVATIONS AND SURVEY METHODOLOGY

2.1 **Site visit:** I visited the site initially on 28 August 2009 to collect my tree data. The weather at the time of my survey was clear, windy and dry, with average visibility.

2.2 **Description of site and surrounds:** The site is located in Barnham Road, which is situated on the outskirts of the village of Barnham (Figure 1). 'Green Oaks' is on the northern side of the road and consists of a large sized house situated at the front of the plot, with a long narrow garden located to the rear. The site is bordered by similar residential development to the north and east, with Barnham Road to the south, and an area of open land to the west.



Figure 1: Approximate geographical location of site in yellow

2.3 **Observations on trees and other vegetation:** The site is enclosed by boundary fences, hedges and other vegetation on the north, east and western boundaries, with the current point of access into the site positioned on Barnham Road. Scattered groups, individual trees and hedges are located throughout the site.

2.4 **Description of proposed development:** This development proposal is to construct thirteen new dwellings on land severed from an existing garden.

2.5 **Tree survey methodology:** My inspection of the trees was visual, and did not involve any climbing or exploratory investigation. During my visit, I identified obvious hedges and groups where this was appropriate and I assigned an identification number to each tree, hedge or group, as shown on the plan in Appendix 1. I then collected the tree data included in Appendices 2 and 3 and placed each individual tree, group or hedge in one

of four categories (A, B, C or R), as set out in British Standard (BS) 5837: Trees in relation to construction – Recommendations. I have included the BS categorisations in Appendix 6 for easy reference. Where of relevance, I also estimated the crown spreads for each tree at the appropriate cardinal compass points, and this information is shown in the tree schedule in Appendix 2.

Although this document is not meant to be a full and detailed report on tree health and safety, any significant visible structural defects or physiological conditions identified, together with preliminary tree works, are also noted in the appropriate columns in the tree schedule in Appendix 2. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.

- 2.6 **Data interpretation:** The tree data and Root Protection Area (RPA) calculations are shown in Appendix 3. As set out in paragraph 5.2.4 of the BS, the RPAs may have been adjusted as a matter of arboricultural judgement, to indicate the estimated likely position of tree roots. These modified (or unmodified) RPAs dictate the location of the tree protection barriers, which encompass the Construction Exclusion Zones (CEZs), and other protective measures as shown on the plan included in Appendix 1. Where there is a need for incursions into RPAs, an assessment of the implications of these activities is set out in Section 3 (Arboricultural Implications Assessment) of this report. Where appropriate, details of suitable work methodologies to mitigate any impact are set out in Section 5 (Arboricultural Method Statement).

3 ARBORICULTURAL IMPLICATIONS ASSESSMENT

3.1 Overview of the implications of the development proposal on trees: BS 5837 (2005) –

Trees in relation to construction – Recommendations sets out in some detail how trees on development sites should be managed. In general terms, the best quality trees or those belonging to the higher BS categories (A and B) are considered as potential constraints on any development proposal, whereas those belonging to Category C would not normally be retained where they would impose a significant constraint on site development or redevelopment. Category R trees are in such poor condition that they are normally removed for sound arboricultural management reasons, regardless of any development proposal. Therefore, these trees can be effectively discounted in the context of the planning process.

On this site a total of FORTY NINE individual trees, groups and hedges were recorded during the tree survey and were assigned to the BS 5837 (2005) categories, as set out in Table 1 below:

Category A and B trees	A total of eight (T1, T3, G4, T9, T14, T17, T18 and G47) trees and groups were rated Category B
Category C trees	A total of thirty nine trees, groups and hedges (G2, T5, T6, T7, T8, T10, T11, H12, G13, H16, T19, T20, G21, T22, T23, T24, T25, T27, T28, G29, T30, G31, T32, G33, G34, T35, T36, T37, T38, T39, G40, G41, G42, G43, G44, T45, G46, H48 and H49) were rated Category C
Category R trees	A total of two trees (T15 and T26) were rated Category R

Table 1: Tree numbers and BS categories

No Category A trees were recorded during my survey. I have therefore focussed on the implications of the development proposal mainly on the Category B trees, and to a lesser extent on the Category C trees. Of the total of FORTY NINE trees, groups and hedges surveyed, THIRTY ONE will be lost to facilitate the development proposal. FOUR additional trees/groups may also be affected by activities arising from the development. I have summarised the implications in Table 2 below and set these aspects out in a little more detail in the following paragraphs.

Trees to be removed for development		Activities in RPAs arising from the development proposal	
Category A and B	Category C	Category A and B	Category C
T3, G4, T14 and T18	T10, T11, G13, H16, T19, T20, T22, T23, T24, T25, T27, T28, G31, T32, G33, G34, T35, T36, T37, T38, T39, G40, G43, G44, T45, G46 and H48	T1, T9 and G47	G41

Table 2: Trees lost and activities in RPAs arising from the development proposal

3.2 Direct implications of the development proposal - Tree retention and tree loss

3.2.1 BS Category A and B trees to be removed (trees of high and moderate quality and value): FOUR Category B trees (T3, G4, T14 and T18) will need to be removed to facilitate the development. However, I think it is relevant that T3 and G4 are located to the rear of the existing house to be retained. Their loss will be noticeable, but only by highway users when viewed across the adjacent field (to the west) for a relatively short distance along the nearby main road. Trees T14 and T18 are either located away from the boundary or are positioned next to other trees and hedges that will be retained. I therefore do not consider that the loss of these trees will be particularly significant when viewed from outside the site and that their removal could be successfully mitigated with new tree planting elsewhere within the development.

3.2.2 BS Category C trees to be removed (or those of low quality and value): As discussed, trees belonging to Category C are not normally retained where they would impose a significant constraint on the development or redevelopment of a site. In this instance, a TWENTY SEVEN Category C trees, groups and hedges (see Table 2) will need to be removed to facilitate this development proposal. However, I believe that it is significant that for the most part these are typical domestic garden trees and they are either small and/or not in particularly good condition. As such, they have very limited potential of maturing into useful or visually significant trees. Some of these individuals could

conceivably be retained in the proposed area of public open space within the site. However, my view is that it would be unsuitable to retain most of the trees in this area because of their poor condition, even though it may be possible to do so. It has therefore been decided to remove additional trees in this area and provide new tree planting as replacements.

The loss of the tall conifer hedge (H16) on the western boundary will have a degree of visual impact in the locality. But, I think it is relevant that it has been unmanaged in the past and this has resulted in its poor condition, with individual trees within the hedge now suffering stem breakage and windthrow. My view is that given the exposed location, close spacing and overall height, the retention of this would simply not be sensible or sustainable in the longer term irrespective of the proposal to redevelop the site. The development proposal presents an opportunity to replace it with something that is more in keeping with the landscape character of the area, and that will be more appropriate given the proposal to redevelop the site.

3.3 Additional implications arising from the development proposal

- 3.3.1 BS Category A and B trees and activities in RPAs:** The protective barriers around trees T9 and G47 will need to be set back to allow sufficient space for the positioning of scaffolding and to provide suitable space for the movement of materials and personnel around the new buildings during their construction. The protective barrier positions around the trees are shown on the plan in Appendix 1. The RPAs that are outside of the barriers will be covered in ground protection and this will be installed after the erection of the barriers and before any clearance or construction work starts on site. The provision of ground protection to allow pedestrian access in RPAs is supported in para 9.3 of BS 5837 (2005) and I do not perceive this to be a particular problem, provided it is implemented correctly and remains in situ throughout the construction phase of the project. In addition, the existing access into the site will be upgraded and a small part of the existing driveway around tree T1 will be removed and this area will be returned to soft landscaping. I do not perceive this to be a problem, provided care is taken and I have provided further details relating to surface removal in Section 5 of this report.

3.3.2 Retained BS Category C trees and activities arising from the development proposal:

As discussed, trees belonging to Category C are not normally retained where they would impose a significant constraint on the development or redevelopment of a site. Trees in G41 (and G21) are in such poor condition that they fall into this category, and my view is that these are coming toward the end of their safe and useful life expectancy. Two trees from G41 will need to be felled as they are immediately adjacent to a new dwelling and cannot be retained. The remainder of the trees in the group will be subject to tree surgery works to maintain acceptable levels of risk in the short term, with discussions undertaken at a later date with the neighbouring property regarding their long term future. As with trees T9 and G47 (above), the protective barriers will need to be set back to allow sufficient space for the positioning of scaffolding and to provide suitable space for the movement of materials and personnel around the new building during its construction.

3.4 BS Category R trees normally removed for management reasons: Trees categorised as R are generally in such poor condition that they are normally removed for management reasons, irrespective of any development proposals. On this site, I have assessed two trees (T15 and T26) as falling into this category, and in line with BS guidance I consider that their loss solely for management reasons is therefore independent of any development proposal for the site.

3.5 Protection of trees during construction and mitigation for trees to be lost

3.5.1 Tree protection during development: The means of protecting trees on development sites can include the installation of protective barriers/ground protection, as well as the prohibition of potentially damaging activities. A preliminary Arboricultural Method Statement is included in Section 5, and details the various issues associated with successful tree protection in a development context on this site. This can be specifically referred to in a suitably worded planning condition attached to any subsequent consent, if deemed appropriate by the council.

3.5.2 New tree planting: Most of the existing trees on the site belong to the lower BS 5837 categories. My view is that there is a need to introduce new tree planting into the site

to ensure a long term and sustainable tree landscape for the future. Some unimportant trees will be lost from the site to facilitate the development proposal, but I believe that the development proposal does represent an opportunity to see some new tree planting introduced into the site. A landscape plan has been prepared by Landscape Perspective Ltd (to be submitted to the council under separate cover) and does include significant new tree planting in prominent locations both within the site and also on the boundaries. I have reviewed the landscaping plans for the site in the context of the new trees, and my view is that the new planting is appropriate for the site and will be more sustainable and an improvement on the existing poor quality trees that will be removed.

4 SUMMARY OF THE IMPLICATIONS OF THE DEVELOPMENT ON TREES

- 4.1 **Summary:** Most of the trees on the site have been assessed as belonging to the lower BS 5837 (2005) C categories. A number of these (and four higher category trees) will need to be removed to facilitate the development. In line with the guidance set out in the BS, I do not believe that the poorer quality trees should be considered as constraints on the proposal to redevelop the site. New landscaping is proposed and this will include new tree planting around the site, together with the reinforcing of the existing boundary tree planting. Having carefully considered the situation in some detail, I believe that the proposed development is arboriculturally acceptable, despite the tree losses. The introduction of new sustainable tree planting into the site to replace the existing trees is welcome and will ensure the presence of large, good quality and sustainable trees on the site for the future.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Tree protection issues

5.1.1 Tree Protection Plan (TPP): The plan in Appendix 1 is illustrative, and based on the layout drawings and topographical survey provided. Therefore, all scaled measurements should be checked against the original design documents. The attached plan and all other information in this report should only be used for dealing with the tree protection issues and all other uses are prohibited, unless authorised by Ecourban Ltd. Normally, all the existing trees will have been numbered, with high categories (A and B) highlighted in green and blue rectangles and low categories (C and R) highlighted in grey and red respectively. However, on this site no Category A trees were recorded. The plan also shows the locations of the proposed protective measures, including areas where special care may be required. Additionally, any trees to be removed are indicated with a red dashed crown outline. The TPP is an important document, and a copy of it should be kept on site for reference whilst the development is under construction.

5.1.2 Protective barriers: Information on barrier design based on BS 5837 (2005) guidance is included in Appendix 4, and the approximate location of the barriers is illustrated on the plan in Appendix 1. The protective barriers will be erected before any materials or machinery are brought onto the site, and before any clearance or construction activities occur. Once the protective barriers have been positioned, these will stay in situ for the duration of the construction, unless previously agreed with the arboricultural consultant or council's tree officer. There will be no access into the protected area, and the storage of excavated debris and building materials will be prohibited in RPAs, unless authorised by the arboricultural consultant, after discussion with the council's tree officer. No fires or fuel storage will be allowed within or near to protected areas under any circumstances.

5.2 Arboriculturally sensitive operations

5.2.1 Activities in Root Protection Areas (RPAs): Work in RPAs must be done with care, as set out in the following text. Additionally, qualified arboricultural supervision is also needed to minimise the risk of misinterpretation and to reduce the chances of tree

injury occurring. On this site, I have identified the following activities and I have detailed appropriate work practices in the following paragraphs to reduce the potential of damage occurring to the tree.

5.2.2 **Removal of existing hard surfacing:** Tree T1 is to be retained and great care must be taken to avoid damage, particularly to its roots. I therefore set out the following guidance to minimise any risk of significant implications occurring to this tree:

- **Minimal disturbance:** If appropriate, the sub base will be left in situ to minimise ground and root disturbance.
- **Rubble and debris removal:** This will be removed from RPA manually across the existing hard surfacing (or temporary ground protection) in a way that prevents any soil compaction. Alternatively, debris or spoil will be lifted out by machines working from outside the protected area or positioned on the existing hard surfacing to be retained.
- **Working in the RPA:** All works will be undertaken carefully using appropriate hand tools. Careful use of a small (<5 tonne) excavator in the area is unlikely to cause any harm to the nearby tree, provided it works only from the existing hard surfacing under appropriate supervision. The excavator can be used to loosen and remove the existing drive. However, the bucket of the machine should be kept level, so that the front edge is horizontal and should only be used in a backward 'scraping' motion. Once the existing surfacing has been removed, machines must not encroach onto unprotected soil in the RPA.
- **Potential for compaction of the soil structure:** Once the hard surfacing has been removed, the newly exposed soil and any roots beneath are vulnerable to damage. Therefore, vehicular or repeated pedestrian access across the RPA will not be permitted, unless on the existing drive or new road construction.
- **Installation of new soft landscaping:** Good quality top soil should be used to infill the area around the tree where the existing drive has been removed and the area is to be soft landscaping. The soil should be firmed into place, but not overly consolidated in preparation for turfing or seeding. As discussed, exposed soil and

tree roots are vulnerable to damage by compaction. Therefore, vehicular access will not be permitted during the soft landscape installation phase and pedestrian movements required to carry out the necessary work will be kept to a minimum.

5.3 Additional tree-related issues

5.3.1 Site supervision: Whilst it is possible to work within RPAs, high levels of care and supervision are generally required. Qualified arboricultural supervision is essential during arboriculturally sensitive operations to minimise the risk of any confusion, which could result in mistakes and damage occurring. Therefore, site personnel will be properly briefed (where appropriate) before any work starts, and the ongoing activities will be inspected by the arboriculturalist at crucial times to assure that the work is carried out in accordance with this document and any conditions imposed by the council.

5.3.2 Installation of new services or upgrading of existing services: Final details relating to services are traditionally left until after planning consent has been granted by the council. Where practicable, all new services will be outside RPAs, but where existing services within RPAs require upgrading or new provision is required, great care will be taken to minimise any disturbance. Trenchless installation will be the preferred option, but if this is not feasible, any excavation will be carried out by hand in accordance with the guidelines set out in NJUG Volume 4 - Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

5.3.3 Storage of materials, cement mixing and washing points: All construction storage areas, cement mixing and washing points for equipment and vehicles will be outside RPAs, unless otherwise agreed with the council.

5.3.4 Contractors car parking, site offices and welfare facilities: Whilst it is possible to have site offices and welfare facilities within RPAs, care is needed in their positioning and also in the connection of water, electricity and drainage to service them. Therefore, these will generally be sited outside the RPAs, unless agreed previously with the council. Contractor's car parking facilities will also be located away from retained trees.

5.3.5 Tree works: Any tree pruning or tree removal operations are set out in the tree schedule included in Appendix 2. Additionally, those trees scheduled for removal are also shown on the Tree Protection Plan included in Appendix 1.

5.3.6 Planning, communication and preliminary timing of events: It is not unusual for the details of timing of operations that could impact on important trees to only be finalised once planning consent has been given. Site managers, clearance and construction teams, and other important personnel are normally only appointed at this stage and it is these people who will be crucial in delivering the tree protection detailed in this report. My experience is that the pre commencement site meeting is critical in terms of avoiding damage to trees and this particular aspect, along with tree protection issues should be specifically referenced in a suitably worded planning condition imposed by the council. In the intervening time I propose the following preliminary cascading timetable of events to help minimise any risk of impact on important trees. However, the following schedule may be modified at the pre-commencement meeting, subject to discussion with all parties and agreement with the council:

1. Pre-commencement site meeting
2. Extent of arboricultural supervision agreed
3. Tree works undertaken
4. Protective barriers erected before any clearance or construction activities occur on site and notification to the council that this is in place
5. Installation of services

Barrie Draper BSc (Hons) Arb TechCert(ArborA) CertArb(RFS)

Arboricultural Consultant

Date: 1 June 2011

APPENDIX 1: TREE PROTECTION PLAN

1 A1 plan

APPENDIX 2: TREE SCHEDULE AND INVENTORY

Background fill colour represents BS 5837 codes: A Category trees have green backgrounds, B Category trees have light blue backgrounds, C Category trees have grey backgrounds and R Category trees have red backgrounds.

Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: including physiological and structural condition	Management proposals	BS category
			@1.5m	Base	N	E	S	W					
All trees												Crown clean all trees. Where appropriate, crown lift trees to 4m over site and 5m over public carriageway	
T1	Hornbeam	13		131	9	7	10	7	4	M	Multi stemmed at 2m with tight forks. Crown reduced previously		B1
G2	Mixed sp	-	-		-	-	-	-	-	MA	Small trees		C1
T3	Hornbeam	12		68	3	3	3	3	3	MA	Multi stem at ground level with tight forks	FELL	B1
G4	Hornbeam	13		<69	6	7	1	2	3	MA	Two trees in close proximity. Unbalanced crown with tight forks	FELL	B1
T5	Cherry	<5		23	2	2	2	2	1	MA	Small tree, twin stemmed at 1m with tight fork		C1
T6	Bay	7		30*	1	1	1	1	-	MA	Small shrub, multi stemmed at ground level with tight forks		C1
T7	Eucalyptus	8		30*	3	2	2	2	3	MA	Twin stemmed at 1m, unbalanced crown, poor architectural framework		C1
T8	Palm	4		35	1	1	1	1	-	MA	Small tree		C1

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Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5m	Base	N	E	S	W					
T9	Eucalyptus	11	22*		4	4	4	4	3	MA			B1
T10	Holly	<5		19	3	1	1	2	2	MA	Small tree/shrub, multi stemmed at ground level, unbalanced crown with poor architectural framework	FELL	C1
T11	Weeping willow	6	16		3	1	1	3	2	Y	Small tree, severely unbalanced	FELL	C1
H12	Leyland cypress	<11		45*	-	-	-	3	-	MA	Unremarkable domestic conifer planting, multi stemmed with tight forks	Cut back where appropriate	C1
G13	Grey willow	10		<18*	4	4	4	4	2	MA	Group of trees in close proximity. Poor architectural framework	FELL	C1
T14	Birch	15	33*		4	4	3	3	3	MA	Some root severance on west side	FELL	B1
T15	Poplar sp	17	98		3	3	3	3	4	M	Advanced decay in main stem on east side	FELL	R
H16	Leyland cypress	<17		<45	-	3	-	-	-	MA	Double row of closely spaced unmanaged domestic conifers. Multi stemmed, with tight forks, some stem breakage and failures evident	FELL	C1
T17	Birch	13		34*	4	-	3	4	3	M	Unbalanced crown		B1
T18	Weeping willow	8	24		5	4	4	4	2	MA		FELL	B1
T19	Hazel	<7		75*	4	3	4	3	2	M	Small shrub/tree	FELL	C1

ARBORICULTURAL IMPLICATIONS APPRAISAL FOR GREEN OAKS, BARNHAM ROAD, BARNHAM

REPORT REF: 11192-A/A

APPENDIX 2: TREE SCHEDULE AND INVENTORY

Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5m	Base	N	E	S	W					
T20	Leyland cypress	12		42*	3	3	3	3	2	MA	Multi stemmed with tight forks	FELL	C1
G21	Poplar	<17		<50*	-	3	-	-	<4	M	Linear grouping of trees with similar characteristics. Many trees with defects including leaning stems, poor architectural framework, decay ingress and unsympathetic past management	Repollard and monitor. Post construction inspection required	C1
T22	Norway spruce	<10	24		2	1	2	3	2	MA	Unbalanced crown	FELL	C1
T23	Field maple	5	27		2	-	3	6	2	MA	Unbalanced crown	FELL	C1
T24	Myrobalan plum	5		32	4	4	4	4	2	MA	Small tree, multi stemmed at 1m	FELL	C1
T25	Weeping willow	7	21		2	2	2	2	2	Y	Small tree with stem defect	FELL	C1
T26	Sycamore	<13		33	1	1	1	4	3	MA	Twin stemmed with defect. Unbalanced crown	FELL	R
T27	Sycamore	<13	23		1	3	1	4	3	MA	Influenced by proximity to adjacent trees	FELL	C1
T28	Ash	<13			4	3	1	5	3	MA	Influenced by proximity to adjacent trees	FELL	C1
G29	Leyland cypress	<13	<18		1	1	1	-	-	Y	Small trees in close proximity to each other. Influenced by proximity to adjacent trees		C1

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Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5m	Base	N	E	S	W					
T30	Leyland cypress	<13	38		3	3	1	1	3	MA	Poor architectural framework and influenced by proximity to adjacent trees		C1
G31	Hazel	<4		<35*	-	-	-	-	Y	Y	Small, scattered undercanopy shrubs with similar characteristics	FELL	C1
T32	Liquidambar	<4	13		6	1	1	1	-	Y	Small tree, severely unbalanced	FELL	C1
G33	Elder	<4		<30*	2	2	2	2	-	MA	Small shrubs/trees with similar characteristics located in close proximity to each other	FELL	C1
G34	Mixed sp planting, mainly laurel with holly and bay	<7		<25	-	-	-	-	-	MA	Small, closely spaced, multi stemmed shrubs with similar characteristics	FELL	C1
T35	Norway maple	<13	44		1	6	8	2	3	M	Unbalanced crown due to proximity to adjacent trees	FELL	C1
T36	Sycamore	<13	36		1	2	5	2	3	MA	Twin stemmed at 1.5m, tight fork and unbalanced crown	FELL	C1
T37	Norway maple	<13	37		4	6	2	1	3	MA	Unbalanced crown and influenced by proximity to neighbouring trees	FELL	C1
T38	Norway maple	<13		38	4	3	3	3	3	MA	Influenced by proximity to neighbouring trees	FELL	C1
T39	Horse chestnut	9	27		5	5	1	2	3	MA	Unbalanced crown and influenced by proximity to neighbouring trees	FELL	C1
G40	Mixed sp, mainly hazel	<5		<35	-	-	-	-	-	MA	Small, scattered shrubs with similar characteristics	FELL	C1

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Tree number	Species	Height (m)	Stem diameter (cm)		Branch spread (m)				Height crown clearance (m)	Age class	Notes: Including physiological and structural condition	Management proposals	BS category
			@1.5m	Base	N	E	S	W					
G41	Poplar	<17		<80*	-	3	-	3	5	OM	Linear grouping of trees with similar characteristics. Many trees with defects including leaning stems, poor architectural framework, decay ingress and unsympathetic past management.	Crown reduce trees by 40% and monitor. Marginal category C trees	C1
G42	Yew	<3		<15*	2	2	2	2	-	Y	Two small trees with similar characteristics		C1
G43	Hazel	<5		<35*	2	2	2	2	-	MA	Small shrubs/trees with similar characteristics	FELL	C1
G44	Cherry	<7	<13		-	-	-	-	3	Y	Two trees, with poor stem form and influenced by their close proximity to each other	FELL	C1
T45	Cherry	<9		42	5	5	5	5	2	M	Multi stemmed at 1.5m, tight forks with included bark	FELL	C1
G46	Fruit	<11		<40*	3	3	2	2	2	MA	Closely spaced trees, covered in dense ivy, with poor architectural framework	FELL	C1
G47	Hornbeam	<13		<55*	9	-	6	9	4	M	Marginal Category 8 trees. Closely spaced linear formation, many with tight forks. Possible unmanaged hedge		B1
H48	Leyland cypress	<4		25*	1	-	1	-	-	MA	Unremarkable domestic conifer hedge with unmanaged tree in north eastern corner	FELL	C1
H49	Mixed sp, mainly privet & laurel	<4		<20*	-	-	-	-	-	Y	Domestic boundary hedge	Cut back as appropriate	C1

APPENDIX 2: TREE SCHEDULE AND INVENTORY

ABBREVIATIONS:

Abbreviations	Meaning	Abbreviations	Meaning	Abbreviations	Meaning
T	Individual tree	M	Mature	RPA	Root Protection Area
G	Groups of trees	MA	Maturing	<	Less than
H	Hedge	Y	Young	>	More than

TREE SCHEDULE GUIDANCE NOTES:

Tree number	Assigned during the site visit and also referenced on the plan in Appendix 1.
Species	Common name and referenced to scientific name in the above list. Where I have some doubt over the actual tree species, the genus will have been noted followed by sp. Where trees are numerous and present in groups, not every individual species may have been noted.
Height	Measurement of total tree height using a laser hypsometer to nearest metre.
Stem diameter	Measurement of stem diameter either at ground level or 1.5m above ground with a forester's girth measuring tape. Diameters followed by asterisk symbol indicate estimated diameters because of access difficulties, presence of ivy or other obstructions. Where trees are present in a group, the tree with the largest stem diameter within the group will have been measured/estimated.
Branch spread	Where appropriate and where ground conditions allow, an estimate of the crown spread at each of the cardinal compass points. Where only part of the site is affected by trees, measurement may be in one or two directions only
Height crown clearance	Distance in metres from where main crown begins to ground level and the point beyond where crown lifting would not be appropriate.
Age class	Simplistic estimate of tree age in one of three categories (young, maturing or mature).
Notes	Although this document is not intended to be a full and detailed report on tree health and safety, any significant structural defects or physiological conditions have been identified where these were visible. Where no entries are recorded, this indicates no observable issues were identified. Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access. Climbing inspections are not carried out during a walkover tree survey and, if heavy ivy is present, tree condition is assessed from what can be seen from the ground.

APPENDIX 2: TREE SCHEDULE AND INVENTORY

Management proposals	<i>The inspection of all trees was of a preliminary nature and only defects visible from the ground have been identified. Each individual tree may not have been inspected closely because of access difficulties and only defects visible from the inspection point have been identified. Monitoring may be indicated where tree risk can be adequately managed by increased frequency of site inspections. Further investigation may be indicated where additional data may be required beyond a purely visual assessment. However, a full post development tree inspection is recommended to establish that the trees retained during construction pose acceptable levels of risk once the development has been completed.</i>
BS 5837 (2005) Category	<i>Either R, A, B or C based on the BS 5837 (2005) guidance.</i>

TREE INVENTORY:

Common Tree Names	Scientific Tree Names	Common Tree Names	Scientific Tree Names
Ash	<i>Fraxinus excelsior</i>	Horse chestnut	<i>Aesculus hippocastanum</i>
Bay	<i>Laurus nobilis</i>	Laurel	<i>Prunus laurocerasus</i>
Birch	<i>Betula pendula / pubescens</i>	Leyland cypress	<i>x Cupressocyparis leylandii</i>
Cherry	<i>Prunus sp</i>	Liquidambar	<i>Liquidambar styraciflua</i>
Elder	<i>Sambucus nigra</i>	Myrabalan plum	<i>Prunus cerasifera</i>
Eucalyptus sp	<i>Eucalyptus sp</i>	Norway maple	<i>Acer platanoides</i>
Field maple	<i>Acer campestre</i>	Norway spruce	<i>Picea abies</i>
Fruit	<i>Malus sp, Prunus sp or Pyrus sp</i>	Palm	<i>Trachycarpus fortunei</i>
Grey willow	<i>Salix cinerea</i>	Poplar sp	<i>Populus sp</i>
Hazel	<i>Corylus avellana</i>	Privet	<i>Ligustrum vulgare</i>
Holly	<i>Ilex aquifolium</i>	Sycamore	<i>Acer pseudoplatanus</i>
Holm oak	<i>Quercus ilex</i>	Weeping willow	<i>Salix babylonica / x sepulcralis 'Chrysocoma'</i>
Hornbeam	<i>Carpinus betulus</i>	Yew	<i>Taxus baccata</i>

APPENDIX 3: ROOT PROTECTION AREA (RPA) DATA

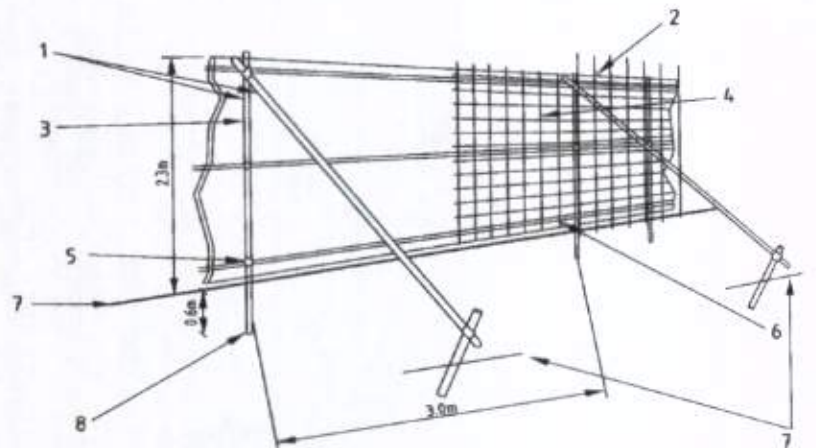
Tree No	Diameter (cm)		RPA radius (m)	RPA area (m ²)
	@1.5m	Base		
T1		131	13.1	539
T2				
T3		68	6.8	145
G4		69	6.9	150
T5		23	2.3	17
T6		30	3.0	28
T7		30	3.0	28
T8		35	3.5	38
T9	22		2.6	22
T10		19	1.9	11
T11	16		1.9	12
H12		45	4.5	64
G13		18	1.8	10
T14	33		4.0	49
T15	98		11.8	434
H16		45	4.5	64
T17		34	3.4	36
T18	24		2.9	26
T19		75	7.5	177
T20		42	4.2	55
G21		50	5.0	79
T22	24		2.9	26
T23	27		3.2	33
T24		32	3.2	32
T25	21		2.5	20
T26		33	3.3	34
T27	23		2.8	24
T28			0.0	0
G29	18		2.2	15
T30	38		4.6	65
G31		35	3.5	38
T32	13		1.6	8
G33		30	3.0	28
G34		25	2.5	20
T35	44		5.3	88
T36	36		4.3	59
T37	37		4.4	62
T38		38	3.8	45
T39	27		3.2	33
G40		35	3.5	38
G41		80	8.0	201
G42		15	1.5	7
G43		35	3.5	38
G44	13		1.6	8
T45		42	4.2	55
G46		40	4.0	50
G47		55	5.5	95
H48		25	2.5	20
H49		20	2.0	13

APPENDIX 3: ROOT PROTECTION AREA (RPA) DATA

Notes:

General	<i>Tree numbers and stem diameters are the same as those identified in the tree schedule in Appendix 2. RPA radius and RPA area calculations have been undertaken in accordance with the guidance set out in BS 5837 (2005).</i>
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APPENDIX 4: ILLUSTRATIVE SPECIFICATION FOR TREE PROTECTION BARRIERS



- 1 Standard scaffold poles
- 2 Uprights to be driven into the ground
- 3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
- 4 Weldmesh wired to the uprights and horizontals
- 5 Standard clamps
- 6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
- 7 Ground level
- 8 Approx. 0.6 m driven into the ground

Illustration taken from British Standard (BS) 5837: Trees in relation to construction – Recommendations

'Barriers shall be fit for purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around retained trees. On all sites, special attention should be paid to ensuring that barriers remain rigid and complete. In most cases barriers should consist of a scaffold framework, comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at maximum interval of 3m. Onto this, weld-mesh panels should be securely fixed with wire or scaffold clamps.'

– BS 5837 (2005)

Ref: Tree Protection Barriers	Drawing No. TPB1
Scale: N/A	

APPENDIX 5: ILLUSTRATIVE SPECIFICATION FOR GROUND SURFACE PROTECTION IN RPAs

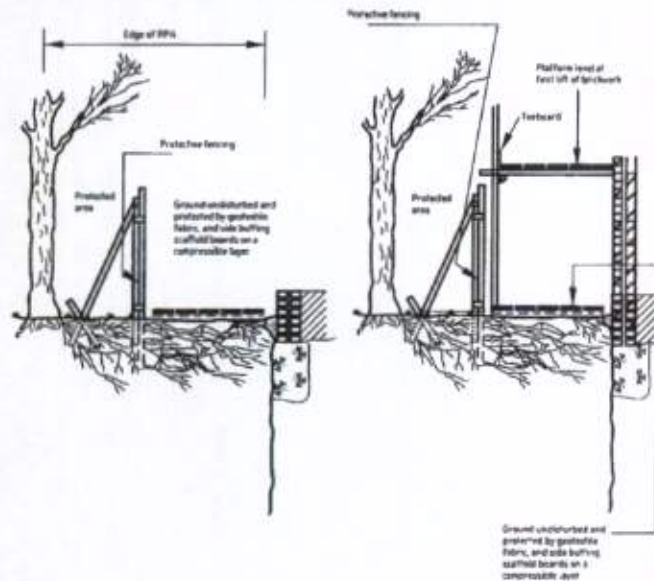


Illustration taken from British Standard (BS) 5837: Trees in relation to construction – Recommendations.

'For pedestrian access within the RPA, the installation of ground protection in the form of single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by a scaffold may be acceptable.'

– BS 5837 (2005)

Ref: Ground Protection

Drawing No. GP1

Scale: N/A

APPENDIX 6: BS 5837 (2005) – ASSESSMENT CATEGORIES

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<u>Category R</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).			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	
<u>Category A</u> Those of high quality and value: in such a condition as to be able to make a substantial contribution (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)	GREEN
<u>Category B</u> 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 woodlands, 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	BLUE
<u>Category C</u> 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 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, 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 150 mm should be considered for relocation			

APPENDIX 7: QUALIFICATIONS AND EXPERIENCE OF BARRIE DRAPER

- 1 **Qualifications:** I have a BSc degree (with Honours) in Arboriculture from the University of Central Lancashire. I also hold a BTEC Higher National Diploma (HND) in Forestry (Lowland Management), the Arboricultural Association's Technician's Certificate in Arboriculture (Tech Cert), the Royal Forestry Society's Certificate in Arboriculture (Cert Arb) and the National Examinations Board Certificate in Forestry.

- 2 **Career experience:** I began my arboricultural career in 1993 as an arborist with Portsmouth City Council. During my time with the council I worked for both the direct labour organisation and for a private contractor where I obtained valuable hands on experience in all aspects of arboriculture. From 1999 to 2002 I was employed as Senior Arborist by Parchment Housing Group, a housing association based near Portsmouth. I managed the Groups' tree stock on their behalf, carrying out tree inspections and practical management operations. I have worked in local government, spending time with Thurrock Borough Council in Essex where I was the Tree and Landscape Officer, and with Winchester City Council, where I was Arboricultural Officer for a period of 2 years. During my time working in local government I was responsible for making Tree Preservation Orders, administering applications to work on protected trees and advising on planning applications when trees were considered material constraints on development. Working within a planning environment allowed me to gain valuable experience in the management of trees in development situations and an understanding of the planning process and how it relates to trees. More recently, (since January 2005) I worked for Barrell Tree Consultancy Ltd advising clients on a wide range of tree related issues. I left the company in September 2008 and have been working as an independent consultant since.



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