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Arboricultural Report

BS 5837:2012 Tree Survey

& Arboricultural Impact Assessment

Land at:

Luccombe Manor, Popham Rd, Shanklin

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Contents

Validation Statement for LPA Registration.....	3
1. Introduction.....	4
2. Site Visit and Tree Survey.....	5
3. Arboricultural Impact Assessment.....	6
4. Conclusions & Recommendations.....	8
Appendix 1: Tree Survey Schedule.....	i
Appendix 2: Tree Survey Notes.....	ii
Appendix 3: BS5837 Cascade Chart for Tree Categorisation.....	iii
Appendix 4: Tree Survey and Constraints Plan.....	iv



Validation Statement for Local Planning Authority (LPA) Registration

This report is intended to be submitted to the Isle of Wight Council in support of a planning application. The report contains tree information relevant to the proposed development. For LPA validation purposes, this report contains the following information:

- A full tree survey compliant to the requirements of BS5837:2012 "Trees in relation to design, demolition and construction - Recommendations", undertaken by a competent and qualified arboriculturist.
- A suitably scaled plan with north point showing the site boundaries and the tree survey information.
- An assessment of the impacts of the proposed development on the existing trees, including recommendations of which trees should be removed/retained.

1. INTRODUCTION

1.1 **Instruction:** I am instructed to survey trees that could affect or be affected by the proposal on land at Luccombe Manor, Popham Rd, Shanklin. This report, in compliance with BS5837:2012 "Trees in relation to design, demolition and construction - Recommendations" (herein referred to as BS5837) is required to accompany the submission of a detailed planning application for an extension to the hotel. My instruction is to prepare the following information:

- A schedule of the relevant trees and all tree data as required by BS5837
- A Tree Survey and Constraints Plan (TSCP)
- An Arboricultural Impact Assessment (AIA)

1.2 **Information provided:** Drawing AS/SW/0822 TSCP is derived from the following drawings as supplied to me via Nova Architectural Ltd:

- *NA21/056/05 Rev. E Site Plan* in DWG & PDF formats.

1.3 **Purpose and scope of this advice:** The survey & report have been produced both to assist the design process and to support the planning application. It demonstrates the site's arboricultural constraints and makes recommendations regarding the potential impact of the proposal on trees and vice versa. It focuses on all trees that may affect or be affected by the proposal, whether within the boundary or off-site.

1.4 **Limitations:**

1.4.1 The survey was a preliminary assessment undertaken from ground level, and limited by boundaries, vegetation and other features on site. Observations have been made solely for the purposes of assessment relevant to the planning process, and the report is not a condition survey or safety inspection. Where obvious risks have been observed they have been highlighted in the "preliminary management recommendations" of the tree survey schedule. Binoculars, sounding mallet and probe have been used to aid tree assessment; no invasive or non-invasive internal decay detection equipment have been used in assessing the trees.

1.4.2 The recommendations and conclusions in this report relate only to the conditions found on site at the time of the inspection, as trees are dynamic organisms whose health and condition can change rapidly. The findings are valid for a period of 12 months from the date of report providing the site remains as it stands at present. Any significant changes to the site which may affect the trees (such as building works, changes in levels, hydrology etc.) would require a re-assessment of the trees.

1.4.3 This report is intended for use solely by the client and their agent if applicable, and not for the benefit of any third party. Any person who is not directly involved with this site shall not have any rights under or in connection with it. All rights in this report are reserved. No part of it may be reproduced in any form without the written consent of Woodside Tree Consultancy.

1.5 **Ecological Constraints:** The Wildlife and Countryside Act 1981 and amendments made within and subsequent to the Countryside and Rights of Way Act 2000 provides statutory protection to bats, birds and other species that inhabit or use trees. The

protection afforded to such species could impose significant constraints on the use of a particular site, as well as restrict the timing of any works that may be necessary. Any such restrictions are in addition to arboricultural constraints in this report.

- 1.6 **Status of the trees:** Having searched the Isle of Wight Council Core Strategy Proposal Map on 15th August 2022, it shows that there is one Tree Preservation Order (TPO) affecting the site. TPO/1949/3 covers the site as a group designation (G66). This group protected “conifer, willow and beech” trees that were present at the time the order was made, however the document gives no further details regarding the location or number of these trees within the site. Based on the trees now present, it is likely that only T1 is protected by the TPO, as all other trees are different species from those listed in the Order.

2. SITE VISIT AND TREE SURVEY

- 2.1 **Site visit:** I visited the site on 28th July 2022, with the weather at the time of survey being fine and in no way hindered my ability to view the trees satisfactorily. All observations were made from accessible points at ground level, with measurements except stem diameter being estimated unless otherwise indicated in the Tree Survey Schedule and Notes.
- 2.2 **Site Description:** The site is part of an existing well established hotel curtilage, consisting of buildings, gardens and gravel parking. Most tree cover was around the existing parking area, with one large tree further to the SE of the proposed extension. The survey area measured approximately 0.5ha as shown in Figure 1.

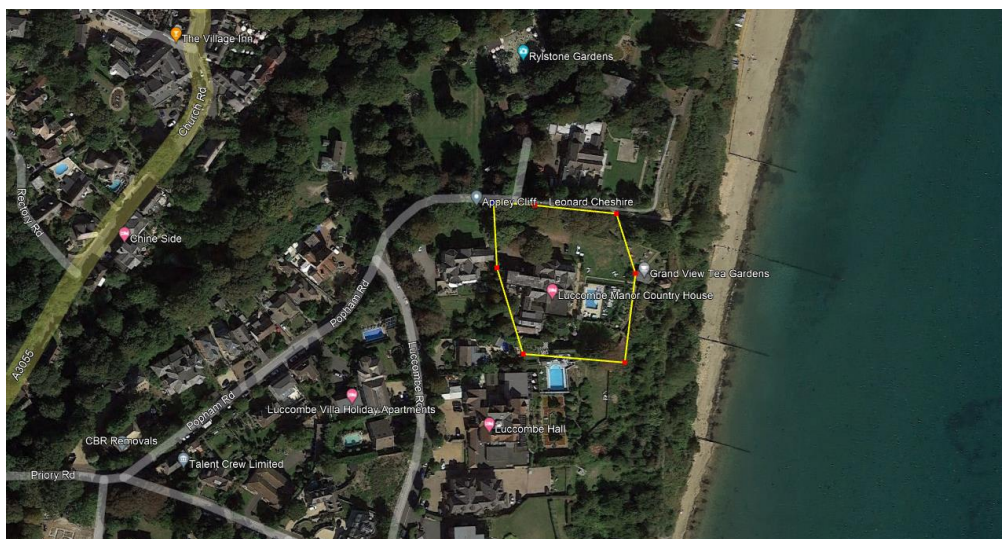


Figure 1. Aerial view showing area covered within this survey (Google 2022)

- 2.3 **Data Collection:** Each relevant tree (above 75mm stem diameter) or group was inspected and allocated an identification number as indicated in the Tree Survey Schedule (Appendix 1) and tree survey plan (Appendix 4). They were allocated one of four categories (A, B, C or U) in line with BS5837 recommendations (see Appendix 3) as well as having the following important information collected:

- Species, Height (m) and stem diameter (mm)
- Average crown spread to the 4 cardinal points (m)

- Average canopy clearance; height and orientation of first significant branch
- Life stage, condition and preliminary management recommendations
- Remaining safe useful life expectancy; Root Protection Area calculations

2.4 Root Protection Areas:

2.4.1 In accordance with section 4.6 of BS5837, the stem diameter measurements have been used to calculate the Root Protection Area (RPA), both in terms of radial distance from the tree and as an area in m². The RPA is the area that should ideally remain free from disturbance by adjacent construction works, as it is deemed to be the minimum area around a tree required to maintain sufficient rooting volume to sustain the tree's vitality. The adequate protection of any roots and soil structure in this area should be treated as a priority.

2.4.2 The calculated extent of each RPA is used to identify any design constraints within the site, and is visually represented on the Tree Survey & Constraints Plan (TSCP - Appendix 4). The TSCP shows the above-ground constraints (*i.e.* branch spread), and the below-ground constraints (the anticipated extent of significant root spread depicted as the calculated RPAs).

2.5 **Tree survey:** Eleven individual trees were surveyed and assessed for their suitability for retention. Please refer to appendices 1 & 4 for details of their identity, location and assessment. Please also refer to the Tree Survey Schedule Notes (Appendix 2) and BS5837 Cascade Chart (Appendix 3) for full details.

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 **General observations:** Most tree cover was located around the perimeter of the frontage car park, with a single large tree located further SE in the hotel grounds. Around the area of the proposed extension, there was only minor hedging and screening shrubs which are noted on the TSCP for information.

3.2 Below ground constraints (Root Protection Areas):

3.2.1 This section deals with tree roots, which can easily be overlooked during construction operations due to being hidden and often their importance, and that of the soil around them, is not fully understood. It is essential that the roots remain undamaged during the site preparation and construction phases, as they provide the structural stability as well as transporting water and nutrients throughout the tree. Crucially they cannot perform their functions effectively if the soil structure around them is also damaged, which is why the RPA must be adequately protected.

3.2.2 The TSCP visually represents the required RPA for each tree as a magenta circle centred on each tree stem. However, in reality the spread of roots for trees in an urban environment will rarely be distributed in a perfect circle as the environment below ground level is highly variable. The presence of structural foundations, pipes, impermeable surface coverings and differing soil conditions mean that tree roots will extend into areas that offer a preferential environment; where water is most available and the soil is least compacted.

- 3.2.3 In consideration of the above influences on root spread, the nominal RPAs of T5-7 have been adjusted (offset by 20%) to the S due to their close proximity and amount of RPA affected by the road and adjacent pavement on the N side of these trees. The engineered and compacted ground and impermeable surfacing in that area is a poor environment for roots so I anticipate fewer roots will be present on this side of the trees. The soil environment to the S is predominantly a long established car park, although its surfacing is predominantly of permeable gravel so will be a preferential area for tree root development. The overall area of the RPAs has not been reduced.
- 3.2.4 As shown on the TSCP, the proposed alterations consist of an extension to the hotel at its S end, well away from tree cover. The nearest RPA (T1) has ample distance from the extension, and the only vegetation to be affected by the scheme are smaller landscaping and coniferous screening, some of which would be removed and other sections likely retained (see section 3.5 for further details on removals). The next nearest larger tree cover is located well over 20m away to the W site boundary, behind existing hotel outbuildings. As such, the scheme would have no impact on those trees.
- 3.2.5 Although all trees to the hotel frontage have been included in the survey for completeness, it is understood that the current extent of surfacing provides sufficient car parking provision when allowing for the proposed extension. Therefore the existing extent of gravel parking will be retained intact without any additional surfacing requirements affecting any of these trees.
- 3.2.6 To ensure that RPAs are adequately protected during construction from other potentially damaging actions such as storage of materials/plant, temporary site buildings, changes in levels etc., the full extent of RPAs not covered by existing hard surfacing should have protective fencing and/or temporary ground protection erected in line with BS5837 for the duration of site works. It is possible that details pertaining to the placement of protective barriers may be required as a condition of planning approval.
- 3.3 **Above ground constraints (branch spread):**
- 3.3.1 Trees in close proximity to buildings can pose some constraints, both real and perceived. Actual constraints occur where branches can conflict with new elevations, either now or in future. For this reason newly planted trees as well as younger existing trees need to be fully accounted for in the design and layout planning. Other significant constraints that are often overlooked include shading, leaf litter and damage from falling branches. However it should also be remembered that a degree of shading can be desirable to reduce glare and provide comfort during hot weather.
- 3.3.2 There will be no conflict from the proposed extension with any tree cover as the nearest tree has ample clearance from the building. The minor Leylandii hedging adjacent to the extension is not a significant constraint and will be retained as close as possible for continued screening of the outbuildings from the wider hotel site. This hedging will continue to be maintained at an appropriate size to give clearance to the extension without forming any future issues. Given that no tree cover exists in proximity to the extension, and no extension to the existing car parking is proposed; it is therefore concluded that there will no above-ground arboricultural constraints on the scheme.

3.4 **Trees to be retained:**

- 3.4.1 All surveyed trees would be retained as part of this scheme. Access to the site during preparation and construction phases must be managed to protect the existing trees being retained. Sufficient space should be available on this site for construction plant and materials outside the RPAs of retained trees. However if any conflicts are foreseen then alternative arrangements must be made, in consultation with the project arboriculturist and local authority.
- 3.4.2 Tree protection on development sites is of paramount importance if trees are to be retained successfully. The inevitable stress caused by development near existing trees can, if provision for adequate protection is not made, be a significant strain leading to severe damage and even death of a tree. It is important to note that although trees will appear healthy during and on completion of a development, the full effects of below ground damage may not become apparent for five years or more after the works have finished.
- 3.5 **Tree removals:** No removals of surveyed trees will be necessary for this scheme, although several sections of low quality internal landscaping/screening bushes/hedging will need to be removed, as is noted on the TSCP. This vegetation has no wider landscape value and can be sufficiently replaced via an agreed landscaping scheme if required.

4. CONCLUSIONS & RECOMMENDATIONS

- 4.1 The design proposals for an extension at Luccombe Manor, Popham Road, Shanklin have been assessed in accordance with BS5837:2012 "Trees in relation to design, demolition and construction - Recommendations". It is my opinion that all trees can be afforded due respect to ensure their safe and healthy retention during and following the development process.
- 4.2 As long as a scheme of tree protection is provided to prevent conflict with below ground constraints, I believe that the trees highlighted in this report can be retained without undue stress on their long-term health.

Andrew Southcott
19th August 2022

Appendix 1 - BS5837: 2012 Tree Survey Schedule

Tree No.	Species	Height (m)	Stem Diameters (mm)							Branch Spread (m)				Crown Clearance (m)	Height & direction of 1st signif. limb	Age Class	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Est. Remaining Contribution (yrs)	BS5837 Category Rating	Root Protection Radius (m)	RPA (m ²)		
			Single Stem	2-5 stems					5> stems	Mean Dia.	No. Stems	N	E											S	W
				Stem 1	stem 2	stem 3	stem 4	stem 5																	
1	Beech	15	960									9	7	6	7	2	2.5e	M	G	Lge mature feature tree, dense crown, minor dwd. TPO.		20-40	B1	11.52	416.9
2	Lime	19	870									10	9	8	9	4	6r	M	G	Lge mature feature, tight forks, decayed pruning wounds, canopy touching corner of hotel.		40>	A1	10.44	342.4
3	Sycamore	15	850									4	7	8	8	4	2r	M	P	Old pollard, dwd, crown dieback, low vigour.		10-20	C1	10.2	326.9
4	Sycamore	15	490									4	2	3	6	5	0.5w	M	F	Asymmetrical, poor form, old pollard, dwd.		10-20	C1	5.88	108.6
5	Sycamore	15	770									7	3	7	4	4	1.5r	M	F	Prominent on raised bank at entrance, some decay in stems, dwd.		20-40	B1	9.24	268.2
6	Sycamore	15	730									7	4	9	3	4	5r	M	F	Prominent on raised bank at entrance, basal cavity, dwd.		20-40	B1	8.76	241.1
7	Horse chestnut	18		570	540							9	5	8	3	4	1n	M	F	Old pollard, ivy clad, decayed pruning wounds, dwd.		20-40	B1	9.4	278.9
8	Horse chestnut	18	840									9	4	6	4	2	4e	M	F	Old pollard, ivy clad, lge decay cavity in trunk, dwd.		20-40	B1	10.08	319.2
9	Sycamore	14	880									10	3	9	9	3	2r	M	F	Obscured base, internal stem decay, dwd.		20-40	B1	10.56	350.3
10	Sycamore	14	680									8	4	9	4	5	6r	M	F	Obscured base, internal stem decay, dwd.		20-40	B1	8.16	209.2
11	Lime	10	510									7	4	6	3	2	3s	EM	F	Asymmetrical, obscured base, dwd.		20-40	B1	6.12	117.7



Appendix 2 - Tree Survey Explanatory Notes

- 1 **Height** describes the estimated height of the tree from ground level, to nearest 0.5m (nearest 1m where total height exceeds 10m). Where practicable a clinometer is used to aid accuracy.
- 2 **Stem diameter** is the diameter of the main stem(s) measured in millimetres (to nearest 10mm) at 1.5m above ground level in accordance with Annex C of BS 5837:2012. Stem diameter may be estimated where access is restricted or the trunk is covered in ivy. Estimated dimensions are suffixed with a hash (#).
- 3 **Branch spread** refers to the approximate crown radius in metres (rounded up to nearest 0.5m) from the centre of the trunk at the four cardinal points.
- 4 **Crown clearance** is the average height in metres (to nearest 0.5m) of crown clearance above adjacent ground level. Where access is restricted this may be estimated.
- 5 **Height & direction of first limb** in metres above ground level where relevant; section 4.4.2.5 of BS5837 states this should be recorded to fully inform on potential ground clearance issues.
- 6 **Age Class** is as follows: **Y** = young trees up to 10 years old; **SM** = semi-mature trees less than 1/3 life expectancy; **EM** = early-mature trees 1/3 to 2/3 life expectancy; **M** = mature trees over 2/3 life expectancy; **OM** = over-mature trees in decline; **V** = veteran tree possessing certain attributes relating to veteran trees.
- 7 **Physiological Condition** is either: **Good** (trees with only a few minor defects and in good overall health); **Fair** (trees with minor, but rectifiable, defects or in the early stages of stress from which it may recover); **Poor** (trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term); **Dead** (this could also apply to trees that are dying and unlikely to recover). This part of the assessment is essentially a snapshot of the trees' general health based on its appearance, vigour, and presence of any potential symptoms of poor health.
- 8 **Structural Condition** includes consideration of a range of factors including the presence of fungal fruiting bodies, cavities, decay and damage, condition/movement of soil around the tree base, growth habit, biomechanical related defects.
- 9 **Preliminary Management Recommendations** are focused on what is relevant in terms of the proposed development, as well as any obvious major issues that need addressing. The survey is not a condition or safety inspection so should not be relied upon as such.
- 10 **Estimated Remaining Contribution** is the approximate number of years the tree will continue to make a beneficial contribution without the need for oppressive arboricultural intervention, categorised as <10, 10-20, 20-40 and >40.
- 11 **BS Category Rating** refers to BS 5837:2012 Table 1. This relates to tree/group quality and value, where **A** are trees of high quality with an estimated remaining life expectancy of at least 40 years, **B** are trees of moderate quality with an estimated remaining life expectancy of at least 20 years, **C** are trees of lower quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. Category **U** relates to trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. The sub-category refers to the value type, where **1** is mainly arboricultural, **2** is mainly landscape and **3** is mainly cultural including conservation, historic and commemorative.
- 12 **Root Protection Radius** is a radial distance measured from the trunk centre, giving the radius of an equivalent circle. It is calculated using the formulae described in paragraph 4.6.1 of BS 5837: 2012 and is indicative of the minimum rooting area that should remain undisturbed in order for a tree to be successfully retained.
- 13 **RPA area** is the minimum area in m² which should remain undisturbed (up to a maximum area equal to a circular radius of 15m).

Appendix 3 - BS5837 Cascade Chart for Tree Categorisation

Category & definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Trees in such a condition that they cannot realistically be retained as living trees in the context of current land use for >10yrs	<ul style="list-style-type: none"> 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 category U trees; Trees that are dead or showing signs of significant, immediate and irreversible decline; Trees infected with significant pathogens affecting health or safety, or very low quality trees suppressing trees of better quality. <p><i>NOTE: these trees can have existing or potential conservation value making retention desirable</i></p>			DARK RED
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of >40yrs	Particularly good examples of their species, esp. if rare or unusual. Those that are essential components of groups or formal or semi-formal arboricultural features (e.g. principal avenue trees)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of >20yrs	Trees that might be included in category A but are downgraded because of impaired condition such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit category A designation.	Trees present in numbers, usually growing as groups or woodlands such that they attract a higher collective rating than they might as individuals. Trees occurring as collectives but situated so as to make little visual contribution to the area.	Trees with material conservation or other cultural value.	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of >10 years, or young trees with a stem diameter <150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary landscape benefits.	Trees with no material conservation or other cultural value.	GREY



Appendix 4 - Tree Survey and Constraints Plan
(please see attached plan - drawing no. AS/SW/0822 TSCP)