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Arboricultural Report

BS 5837:2012 Tree Survey

& Arboricultural Impact Assessment

Land at:

6 Shore Path, Gurnard

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Ref: AS/AD/1121



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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 for land at 6 Shore Path, Gurnard. 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 planning application for domestic alterations within the site. 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/AD/1121 TSCP is derived from the following drawings supplied to me by Arid Design Ltd:

- *272-01 to 09 Existing & proposed plans* in DWG format

No topographical survey was available, therefore the relevant trees have been positioned by triangulating from fixed points on the supplied plan.

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, however potential hazards and their severity are likely to change as the site changes. 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 above 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 5th November 2021, it shows that there is **one** Tree Preservation Order affecting trees considered within this report. The woodland to the rear of the curtilage is covered by TPO/1999/21 which protects the deciduous woodland as a whole. All trees covered within this report are protected by the Order.

2. SITE VISIT AND TREE SURVEY

- 2.1 **Site visit:** I visited the site on 1st November 2021, with the weather at the time of survey being fine which in no way hindered my ability to view the trees satisfactorily. All observations were made from accessible points at ground level, with all measurements except stem diameter being estimated unless otherwise indicated in the Tree Survey Schedule and Notes.
- 2.2 **Site Description:** The site is a small rear garden area associated with the existing seafront property. The land is bounded to the rear by mature woodland, and to both sides by similar neighbouring curtilages. The rear garden consists of a small lawn area with two existing sheds. The surveyed area relevant to the proposal measures approximately 0.04ha as shown in Figure 1.



Figure 1. Aerial view showing area covered within this survey (Google 2021)

- 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. Therefore the adequate protection of the roots and soil structure in this area must be treated as a priority.

2.4.2 The calculated extent of the 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 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:** Six 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:** All surveyed trees were off-site within the adjacent woodland. The nearest trees were all sycamores, being a mix of single and multiple stem trees of typically asymmetrical woodland-edge growth habits. The nearest tree partially overhung the site, although with sufficient existing clearance from the current shed structure beneath. Several larger trees set further back were included for any potential rooting constraints upon the site. The garden itself only included a small diameter bay which would likely be cleared and re-landscaped as part of the proposed scheme.

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. It is quite possible, depending on soil conditions and tree

species characteristics, that roots will extend beyond this zone, hence this area should be carefully protected during the planning and execution of any site works.

3.2.3 The proposed scheme as shown on the TSCP will actually move the built environment further away from tree roots compared to the existing situation. Currently the RPA of T1-2 both slightly encroach into the site beneath a large shed built on a concrete pad. However the proposal is to remove the sheds and position a new detached dwelling close to the existing house. This will result in open garden space being created at the far end of the site where the RPAs slightly overlap. Therefore as long as the existing structures and sub-bases are carefully removed, the development would have no adverse impact upon the roots of adjacent tree cover.

3.2.4 To ensure that all RPAs are adequately protected from potentially damaging actions such as storage of materials/plant, temporary site buildings, changes in levels etc., their full extent 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 & shading):**

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 The proposed scheme will be clear of any significant tree cover. Most canopy cover is restricted to the woodland outside the site, with only partial overhang of small diameter foliage branching from T1 affecting the corner of this site. Figure 2 provides views of the extent of canopy cover over the site, resulting from the asymmetrical growth habit of this wood-edge tree, with its overhanging canopy having sufficient clearance from the existing shed beneath it. The proposed scheme will see the edge of T1's canopy spread adjacent to the rear corners of the dwelling, but not overhanging it. The current crown clearance is similar to the roof height at these corners, therefore some minor (c.1m) pruning back of existing foliage maybe advisable to provide clearance from gutters & eaves. Given the limited extent of foliage cover in this area and its naturally asymmetrical growth habit, it is concluded that future growth in crown spread from T1 can reasonably be managed to maintain required clearances without any detrimental impact on the health or amenity of this tree or wider woodland.



Figure 2. Woodland edge views showing existing overhang of foliage branching from T1 (left), and further back showing asymmetrical ascending growth habit of T1 (right)

3.3.3 The presence of woodland to the S & E inevitably results in some shading constraints as it already does for the existing garden and neighbouring plots. The partial shading of the existing rear elevation and garden is an accepted part of the location, and the design for the proposed new dwelling has taken these constraints into account.

3.3.4 The primary outlook from the property is north-westwards towards the sea, away from the impact of any tree shading. As such, the main feature of the proposed dwelling is its double aspect and open plan upper floor with large frontage glazing to provide views seawards over the existing bungalow, maximising natural light into the dwelling, including from several rooflights. The ground floor will be affected by shading although this is limited to bedroom and bathroom areas and not main internal living space. The rear garden will continue to experience shade as it always has done; however this is an accepted feature of the location, where the adjacent woodland provides privacy and connectivity with the natural environment. The overriding value of the dwelling will be its seafront location and proximity to associated activities. It is likely to be a predominantly seasonal property where the focus will be on off-site activities rather than reliance on the shaded rear garden. As such, in this instance it is not considered that the impact of tree shading from the protected woodland should be viewed as a significant constraint upon the scheme.

3.4 **Trees to be retained:**

3.4.1 All surveyed trees will be retained within the scheme as they are outside the site. Access to the site during preparation and installation phases must be managed to protect the existing trees. Sufficient space will be available either on or off-site for construction plant and materials outside any unsurfaced RPAs. 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 stress caused by development near existing trees can, if provision for adequate protection is not made, be a significant strain leading to severe damage or death. 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 works have finished.

4. CONCLUSIONS & RECOMMENDATIONS

- 4.1 The design proposals for domestic alterations at 6 Shore Path, Gurnard 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 and provided with adequate protection, to ensure their safe and healthy retention during and following the development process.
- 4.2 All trees are to be retained within the scheme. As long as a scheme of tree protection is provided to prevent conflict with below ground constraints if required; I believe that the trees highlighted within this report can be retained without undue stress on their long-term health.

Andrew Southcott

Woodside Tree Consultancy

30th November 2021

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		N	E	S	W											
				Stem 1	stem 2	stem 3	stem 4	stem 5	Mean Dia.	No. Stems															
1	Sycamore	13		360	350								8	1	2	8	2.5	4r	EM	F	Twin stem, heavily asymmetrical wood edge growth habit overhanging site, minor lower branching.	20-40	B2	6	114
2	Sycamore	17		720	560	340							9	5	3	8	2	0r	M	F	Lge multi stem woodland tree, asymmetrical, ivy, dwd.	20-40	B2	11.7	428.7
3	Sycamore	18	780										2	11	6	7	6	5w	M	F	Ivy, asymmetrical woodland tree, dwd.	20-40	B2	9.36	275.2
4	Sycamore	18	860										5	5	5	8	6	2r	M	P	Heavily ivy clad stems, asymmetrical, tip dieback & dwd.	10-20	C2	10.32	334.6
5	Sycamore	13		320	220								4	2	1	4	4	0r	SM	F	Younger wood edge tree, twin stem, asymmetrical habit.	20-40	B2	4.7	68.2
6	Sycamore	13		330	140	100							3	1	2	3	3	0r	SM	F	younger wood edge tree, multi stem, asymmetrical habit.	20-40	B2	4.5	62.7



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/AD/1121 TSCP)