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## Arboricultural Report

BS 5837:2012 Tree Survey

& Arboricultural Impact Assessment

Land at:

**Wight Haven, Swains Lane, Bembridge**

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Prepared by: Andrew Southcott

Date: 7<sup>th</sup> March 2024

Ref: AS/ED/0324



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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.
- A Draft Tree Protection Plan showing proposed precautionary measures in relation to the development.

## 1. INTRODUCTION

- 1.1 **Instruction:** I am instructed to survey trees that could affect or be affected by the proposal at Wight Haven, Swains Lane, Bembridge. 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. 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 Plan, Constraints Plan & draft Protection Plan (TSP/TCP/TPP)
  - An Arboricultural Impact Assessment (AIA)
- 1.2 **Information provided:** Drawings AS/ED/0324 TSP/TCP/TPP are derived from the following drawings as supplied to me via Mattinson Associates:
- *WLS.MA.20* (Topographic survey) in DWG format.
  - *3352(P)0110* (proposed 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 outside the scope of this report.

- 1.6 **Status of the trees:** Having searched the Isle of Wight Council Core Strategy Proposal Map on 5<sup>th</sup> March 2024, it shows that there are no Tree Preservation Orders (TPO) or Conservation Area designations affecting the site.

## 2. SITE VISIT AND TREE SURVEY

- 2.1 **Site visit:** I visited the site on 9<sup>th</sup> November 2023, with the weather at the time of survey being damp but which 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 an existing residential curtilage, consisting of dwelling, gardens, hard standing and swimming pool. Most tree cover was located to the N & S, both on and off-site. There was also tree cover along the E roadside boundary which provided privacy screening to the dwelling. The survey area measured approximately 0.15ha as shown in Figure 1.



Figure 1. Aerial view showing area covered within this survey (Google 2024)

- 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 TSP (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 m<sup>2</sup>. 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 on site, and is visually represented on the TCP (Appendix 5). The TCP shows the relevant above-ground constraints (*i.e.* branch spread), and below-ground constraints (the anticipated extent of significant root spread depicted as the calculated RPAs).

#### 2.5

**Tree survey:** Seven individual trees and three groups 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 set back away from potential impacts from the domestic alterations, however several trees along the S boundary were in closer proximity. The largest trees were off-site to the N, and for the majority of those trees, their canopies were set well back behind the boundary fence. Rooting areas were likely to overlap the site, however all the nearest ground on-site was covered by existing hard surfacing including a below-ground swimming pool. The proposals include domestic alterations as well as a new carport; and all trees in proximity to these areas were included in the survey.

#### 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 TCP visually represents the required RPA for retained trees as a magenta circle centred on each stem. However, in reality the spread of roots 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 in to areas that offer a preferential environment; where water is most available and the soil is least compacted. In this case, several trees in G2-3, and T4 have RPAs overlapping long established significant excavations and footings for the existing swimming pool and main house, and these features will act as an effective barrier to root spread. As such, their RPAs have been modified as appropriate to reflect this.

- 3.2.3 As shown on the TCP, the proposed alterations will consist primarily of a new carport, and changes to the main house. Most of the dwelling alterations near to RPAs along the N side of the site will not affect trees as they are located at first floor level, and do not affect the existing footprint of the house. Furthermore, access in these areas will be over existing hard surfaced ground that will not be disturbed during works.
- 3.2.4 At the rear of the house the existing sunroom will be extended northwards (away from tree cover), and the outside living space will be redesigned. The latter will include a new pergola and outdoor fireplace, which although it will be nearer to T5 than the current patio area, it will still be outside of its RPA. The only minor point will be that the southernmost support column for the pergola will be situated on the very edge of the RPA, although not encroaching fully into it. Given this extremely small area to be affected (c.0.02m<sup>2</sup>), and that it is limited to just the insertion of a single support column, it is considered that this minor work would have no detrimental impact upon the health of T5. It is recommended that the wider RPA is protected sufficiently during works (see below and Appendix 6), and that the excavations for insertion of the support column are undertaken manually under arboricultural supervision.
- 3.2.5 The new carport is positioned to minimise any arboricultural impacts, being situated centrally between the nearest trees and on an existing hard surfaced parking area. Its rear corner will have a fractional overlap of T2's RPA of c.0.2m<sup>2</sup>, however as it is positioned on an existing driveway any excavations needed in this area are unlikely to have any detrimental impact on tree roots. Although T2 is a small low quality garden planting, it is situated on neighbouring land and it would therefore be appropriate to employ the same precautionary approach to any excavations as for T5. Therefore in this small area of RPA overlap, any excavations should be undertaken manually and under supervision.
- 3.2.6 To ensure that all RPAs are adequately protected from other potentially damaging actions such as storage of materials/plant, ground level alterations, temporary site buildings 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. A draft TPP has been produced (Appendix 6) which shows suitable barriers in proximity to the works. It is possible that a method statement pertaining to the placement of protective barriers and methods for construction in proximity to trees may be required as a condition of any planning approval.
- 3.2.7 It is unlikely that any new services will be required in proximity to the surveyed trees, however if any are required their planning should take into account the TCP to avoid any damage to the tree roots.
- 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 The alterations nearest the N side of the site will have no impact on neighbouring trees in G3. The canopies of those trees are all kept back from the boundary fence with only smaller bushes growing along the fence line and no overhang of this site in proximity to the main house. Therefore, as the alterations will involve first floor modifications only, with no building encroachment further towards the boundary fence, sufficient clearance will be retained in this area.
- 3.3.3 On the S side of the house, T4 would be removed due to its extremely close proximity to the house (see section 3.5). The rear replacement pergola will be fractionally closer to the crown of T5, however its nearest corner will still retain ample clearance from the canopy. Future growth in its crown spread can reasonably be managed as part of normal garden maintenance to retain sufficient clearance from the pergola without any detrimental impact on its health or amenity value. The proposed carport will be positioned on the current parking area, with the gap between the structure and nearest trees being sufficient to allow for future growth to be managed as part of normal garden maintenance. It is therefore concluded that in all cases, canopy spreads will not be a constraint on this scheme.
- 3.3.4 As this scheme relates to alterations to the existing dwelling, with no major changes to the current layout, and with few large trees in a location that result in any significant shading or other nuisance issues; it is not considered that such factors will be a relevant constraint.
- 3.4 **Trees to be retained:**
- 3.4.1 Access to the site during construction must be managed to protect these retained trees. Sufficient space will be available on-site for construction plant and materials outside the required 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.
- 3.5 **Tree work & removals:** No works are necessary to facilitate this scheme, although the removal of T4 is recommended regardless of the scheme due to its excessively close proximity to the house, and growth which has been allowed to grow uncontrolled up and over the roof. T4 is part of the general garden landscaping and has no wider amenity value, and as such its removal is not a constraint on the scheme.





## **4. CONCLUSIONS & RECOMMENDATIONS**

- 4.1 The design proposals for domestic alterations at Wight Haven, Swains Lane, Bembridge, have been assessed in accordance with BS5837:2012 "Trees in relation to design, demolition and construction - Recommendations". It is my opinion that all retained 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 As long as recommendations within this report are followed, and a scheme of tree protection is provided to prevent conflicts with below ground constraints; I believe that the trees can be retained without undue stress on their long-term health.

*Andrew Southcott*  
*7<sup>th</sup> March 2024*

## 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 <sup>2</sup> )		
			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	Pine	6	390										3	4	4	4	2	4s	EM	F	Frontage landscaping, distorted upper crown growth.		20-40	B2	4.68	68.8
2	Cherry	5		180	160	160							4	3	3	3	1	0r	M	F	Small off-site screening tree, no wider value.		10-20	C2	3.5	37.8
3	Cherry	6		180	120								3	3	3	3	2	0r	SM	F	Weak growth within shrubs, no wider value.		10-20	C2	2.6	21.2
4	Magnolia	8		180	120								1	3	3	3	0	0r	M	F	Asymmetrical growth tight to house and over roof. Unsustainable position for future growth.	Recommend fell due to position.	10-20	C2	2.6	21.2
5	Oak	10	540										6	6	6	5	1.5	1.5r	EM	G	Garden feature, good form, minor dwd.		20-40	B1	6.48	131.9
6	Pine	18	910										5	7	8	7	0	0.5r	M	F	Large garden feature, asymmetrical, dwd.		20-40	B1	10.92	374.6
7	Beech	10	450 #										1	4	4	4	2	2w	SM	F	Off-site, inaccessible, heavily asymmetrical, dwd, stem decay, ivy.		10-20	C2	5.4	91.6
G1	Bay & sycamore	av. 7	Various as plotted								Various as plotted				1	0r	SM	F	Low quality frontage screening, multi stem bay, dwd.		10-20	C2	Various as plotted			
G2	Holm oak	av. 16	Various as plotted #								Various as plotted				0.5	0r	M	F	Large off-site stems with partial crown overhang. Cut back, dwd, stem decay noted but inaccessible.		20-40	B2	Various as plotted			
G3	Holm oak	av. 16	Various as plotted #								Various as plotted				0.5	0r	M	F	Dense off-site linear group set back from boundary, obscured & inaccessible. Most crown spread set back from boundary.		20-40	B2	Various as plotted			



## 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 m<sup>2</sup> 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
<b>Trees unsuitable for retention</b>				
<b>Category U</b>  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"> <li>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;</li> <li>Trees that are dead or showing signs of significant, immediate and irreversible decline;</li> <li>Trees infected with significant pathogens affecting health or safety, or very low quality trees suppressing trees of better quality.</li> </ul> <p><i>NOTE: these trees can have existing or potential conservation value making retention desirable</i></p>			<b>DARK RED</b>
	<b>1 Mainly arboricultural qualities</b>	<b>2 Mainly landscape qualities</b>	<b>3 Mainly cultural values, including conservation</b>	
<b>Trees to be considered for retention</b>				
<b>Category A</b>  Trees of <b>high quality</b> 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).	<b>LIGHT GREEN</b>
<b>Category B</b>  Trees of <b>moderate quality</b> 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.	<b>MID BLUE</b>
<b>Category C</b>  Trees of <b>low quality</b> 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.	<b>GREY</b>



## **Appendix 4 - Tree Survey Plan**

(see attached plan - drawing no. AS/ED/0324 TSP)



**Appendix 5 - Tree Constraints Plan**  
(see attached plan - drawing no. AS/ED/0324 TCP)



**Appendix 6 – Draft Tree Protection Plan**  
(see attached plan - drawing no. AS/ED/0324 TPP)