M 07867 725238 | E info@woodsidetrees.co.uk | W www.woodsidetrees.co.uk

Arboricultural Report

BS 5837:2012 Tree Survey

& Arboricultural Impact Assessment

Land at:

Former Rectory, Manor Lodge Rd
Rowlands Castle

Prepared by: Andrew Southcott

Date: 8th March 2021

Ref: AS/TS/0321

Contents

Validation Statement for Local Planning Authority (LPA) Registration

This report is intended to be submitted to the East Hampshire District 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 for land at the Former Rectory, Manor Lodge Road, Rowlands Castle. 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 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/TS/0321 TSP/TCP/TPP are derived from the following drawings supplied to me by Mitchell Evans:

- *20-1845-010/020/030 Existing/Proposed Plans* 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 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 East Hampshire District Council website My Maps page on 4th March 2021, it shows that there are **no** Tree Preservation Orders (TPO) or Conservation Area designations affecting this site. The land immediately adjacent to the N is subject to a TPO; no. EH227(90) protects part of that site as a woodland order.

2. SITE VISIT AND TREE SURVEY

2.1 **Site visit:** I visited the site on 3rd March 2021, with the weather at the time of survey being overcast but 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 an established residential plot, consisting of dwelling, lawn, hard surfacing, mature shrub borders and a selection of trees predominantly in the rear garden. The main tree cover was to the rear where a number of larger oak trees are scattered within the lawn. Several smaller domestic landscaping trees were also located in the rear garden, although these were of no wider amenity value. The relevant area of the site measured approximately 0.2ha as shown in Figure 1.

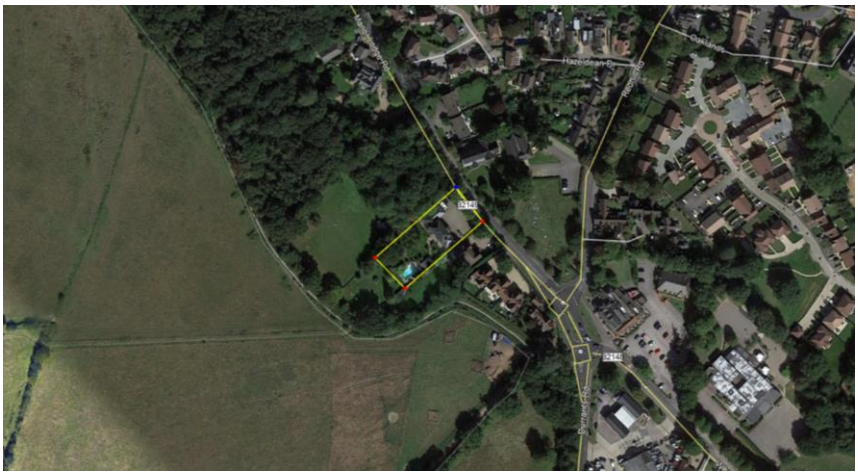

Figure 1. Aerial view showing area covered within this survey (Google 2021)

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 m^2. 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 Constraints Plan (TCP -Appendix 5). The TCP shows the above-ground constraints (*i.e*. branch spread & relevant shading), and the below-ground constraints (the anticipated extent of significant root spread depicted as the calculated RPAs).

2.5 **Tree survey:** Five 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:** The main tree cover consisted of larger oak trees in the rear garden, all of which as well as the nearest off-site trees within the protected adjacent woodland 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 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 site works.

3.2.3 The proposed extension will be clear of the nearest RPAs so there will be no building works affecting the trees, although the new patio will extend partially into the RPA of T1. This encroachment will be limited to 7% of the overall RPA, and as it consists of minor landscaping works I do not consider that any adverse impacts will result as long as the landscaping is carried out carefully, using arboriculturally sensitive methods as discussed below.

3.2.4 The new patio is shown on the plans to be predominantly raised where it encroaches into the RPA, apart from a small section of the “sunken terrace” which will be at current ground level and then stepped up to the house. Where any of the patio

surfacing overlaps the RPA, it should be installed in accordance with BS5837 utilising a no-dig method. This includes avoiding any excavation into the soil to achieve desired levels, other than the removal (using hand tools only) of current turf layer or other surface vegetation. Where the patio is shown to be raised, the fill should be achieved by the use of no-fines granular material to ensure adequate gaseous diffusion. All new hard surfacing within the RPA should be permeable and gas porous. Paving slabs and block paving are available with built-in infiltration spaces between the slabs or blocks which are suitable for use within RPAs as they allow moisture to penetrate to the rooting area.

3.2.5 Where soft landscaping is planned within the RPA as shown on the TCP, this must also be carried out sensitively with the following guidance being adhered to:

- Ground preparation will be carried out sensitively to ensure root damage is minimised. At no time is any heavy plant to be used within the RPA. Turf may be removed using a mechanical turf stripper or by hand.
- At no time shall a rotovator be used within the RPA to prepare the soil. Any levelling will be done with the use of hand tools.
- Should the soil be compacted or have a poor structure which may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.
- New plants/hedging to be planted individually to minimise disturbance (no trench planting).
- No works will be carried out within the RPA if the soil moisture is of a level likely to allow compaction to occur.

3.2.6 To ensure that all RPAs are adequately protected from other potentially damaging actions such as storage of materials/plant, temporary site buildings, changes in levels etc., the nearest 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. Appendix 6 provides a draft TPP which shows suitable barriers in proximity to the works as well as required space for access & construction works. It is possible that a detailed method statement pertaining to the placement of protective barriers may be required as a condition of any 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 All nearby tree canopies have ample vertical & lateral clearance from the proposed extension, with T1 also being clear of the new patio areas. T1 is already in a mature

age class with low vigour, and so will not grow significantly larger than its current stature, therefore future growth is not considered to pose a constraint to the proximity of the rear extension.

3.3.3 The current shading constraints are shown on the TCP, and indicate that the extension will be unaffected by tree shading, whilst the new patio area will only be partially impacted by shading from T1 at limited times of the day. The majority of the patio area including indicative seating/lounger areas will be clear of all shading. As such, and taking into consideration all the above factors, it is concluded that above ground arboricultural issues will not be a constraint upon this scheme.

3.4 **Trees to be retained:**

3.4.1 All surveyed trees will be retained within the scheme. Access to the site during preparation and construction phases must be managed to protect the existing trees. Sufficient space should be available for construction plant and materials outside the RPAs, such as on the existing hard surfaced property frontage. 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 the Former Rectory, Manor Lodge Road, Rowlands Castle 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 in respect of new surfacing and tree protection, I believe that the trees can be retained without undue stress on their long-term health.

Andrew Southcott
8th March 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															
				Stem 1	stem 2	stem 3	stem 4	stem 5	Mean Dia.	No. Stems	N	E	S	W										
1	Oak	11	820								7	7.5	10	7.5	4	3w	M	F	Lge garden feature, prev reduced, low vigour with sparse foliage cover, deadwood, epi shoots.	Crown clean, monitor ongoing condition.	20-40	B1	9.84	304.2
2	Silver birch	13	350								3	3	3.5	1.5	3	4r	EM	F	Asymmetrical habit, minor deadwood.		20-40	B2	4.2	55.4
3	Oak	15	590								6	10	6.5	8	3	4e	M	F	Boundary tree with spreading habit, deadwood, some epi shoots.	Crown clean.	20-40	B1	7.08	157.5
4	Oak	11	490								1	7.5	7.5	1	3	4e	EM	F	Asymmetrical habit, deadwood, decayed limb stub at 2m.	Crown clean.	20-40	B2	5.88	108.6
5	Oak	15							283	6	4	4	7.5	7	2	0r	M	F	Multi stem, asymmetrical habit, deadwood, epi.	Crown clean.	20-40	B1	8.3	217.4

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^2 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	• 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. ***NOTE**: these trees can have existing or potential conservation value making retention desirable*			**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 that 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 Plan

(please see attached plan - drawing no. AS/TS/0321 TSP)

Appendix 5 - Tree Constraints Plan

(please see attached plan - drawing no. AS/TS/0321 TCP)

Appendix 6 – Draft Tree Protection Plan

(please see attached plan - drawing no. AS/TS/0321 TPP)