



M JONES ARBORIST CONSULTANCY IW

*42 WEST ST. – NEWPORT – I.W – PO30 1PR
01983 520075 ADMIN@TREECAREIW.PLUS.COM*

**Tree Survey
and
Arboricultural Implications Assessment
for
residential developments
at
12 Landguard Manor Road,
Shanklin,
Isle of Wight,
PO37 7HZ.
by
Mick Jones RFS CERT ARB**

*AC-TS-LMR.
April 2021.
Client. Kingsmead.*

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INFORMATION.

DAMAGE TO TREES.

A. General:

1. Trees that have good health and stability are well adapted to their surroundings. Any development activity which affects the adaptation of trees to a site could be detrimental to their health, further growth and safety. Tree species differ in their ability to tolerate change but all tend to become less tolerant after they have reached maturity or suffered previous damage or stress.
2. The part of a tree most susceptible to damage is the root system, which, because it is not immediately visible, is frequently ignored. Damage to, or death of the root system affects the health, growth, life expectancy and safety of the entire tree. The effects of such damage may only become evident several years later. Damage may be the result of a number of insignificant but compounding factors that can accumulate over time.

B. Extent and Form of the Root System.

1. **The root system is typically concentrated within the uppermost 600mm of the soil** although it may be deeper within the dense mass of roots and soil close to the base of the tree. Within a short distance of the stem the roots are highly branched, so as to form a network of small diameter woody roots, which typically extend radially for a distance much greater than the height of the tree, except when impeded by unfavorable conditions. All parts of this system bear a mass of fine, non-woody absorptive roots.
2. The root system does not generally show the symmetry seen in the branch system. The development of all roots is influenced by the availability of water, nutrients, oxygen, and soil penetrability. As far as these conditions allow, the root system tends to develop sufficient volume and area to provide physical stability.
3. **The uptake of water and nutrients by the root system takes place via the fine roots, typically less than 0.5mm in diameter. Their survival and functioning – which are essential for the health of the tree as a whole – depend on the maintenance of favorable soil conditions.** The fine roots are short – lived, with the majority dying each winter and with fresh ones developing in response to the needs of the tree.
4. **All parts of the root system, but especially the fine roots, are vulnerable to damage.** Once roots are damaged, water and nutrient uptake is restricted until new ones have grown. Depending on the time this may take, if at all, and the volume of roots able to grow back due to changed soil conditions, such damage may result in decline or ultimately the death of the tree. Mature and over-mature trees respond slowly, if at all, to damage to their woody roots.
5. Damage to the stem, and branches of a tree is not usually sufficient to kill the tree directly but may make it unsafe by affecting the weight distribution of the crown or by facilitating decay in the long term. Such damage may also be disfiguring.

1 INTRODUCTION

1.1. **Brief:** I am instructed to survey trees within and adjacent to a potential development site within the grounds of 12 Landguard Manor Road, Shanklin, Isle of Wight. This will form part of a Planning Application in accordance with the specification in BS 5837:2012 *Trees in relation to design, demolition and construction Recommendations* indicating the possible constraints which may be associated with the trees.

1.2. **Purpose of this report:** The primary purpose of this report is for the architect and council to review the tree information pertaining to the site so as to inform and support both the development design and the planning application process. The report can be used as the basis for issuing a planning consent or engaging in further discussions towards that end. Within this planning process, it will be available for inspection by people other than tree experts so the information is presented in a way to be understood and helpful to those without a detailed knowledge of the subject.

1.3. **Qualifications and experience:** I have based this report on my site observations and the provided information, and I have come to conclusions in the light of my 40 +years arboricultural experience. I hold the Royal Forestry Society's certificate in Arboriculture and the LANTRA Professional Certificate for Tree Inspection.

1.4. **Documents and information provided:** I was provided with site plan: Proposed Block Plan.
These were supplied as an electronic PDF and DWG format by SDA Architecture.
These plans have been utilized with permission to produce the plan for this survey.

1.5. **Scope of this report:** This report is only concerned with the trees which may have an effect on or be affected by the proposed development. This will also include any trees in surrounding areas or properties which may be relevant to a proposed development.

1.6. **Ecological constraints:** The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, provides statutory protection to birds, bats and other species that inhabit or nest in trees. Although the presence or relevance of such wildlife may be noted within this report these issues are beyond my area of expertise, so advice from an ecologist must be sought to check if any relevant constraints may apply to this site.

1.7. **Limitations of use and copyright:** All rights in this report are reserved. No part of it may be reproduced or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature without our written permission. Its contents and format are for the exclusive use of the addressee in dealing with this site. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without the written consent of Treecare I.W Ltd.
This report is valid for one year from the date of inspection.

2 SITE VISIT and OBSERVATIONS

2.1. **Site visit:** I carried out a site visit in March 2021 for tree recording purposes and to assess the site and trees.

All observations were from ground level and did not involve any climbing or detailed investigations beyond what was visible from accessible points at ground level. All dimensions were estimated unless otherwise indicated. The weather at the time of inspections was sunny, dry and calm.

2.2. **Brief site description:** The site is within a rear garden associated with the existing property. The site has a slight run from east to west and is generally level. The site is laid to grass with mature trees and boundary hedges and fencing.

The landscape surrounding the site to is a mixture of detached residential houses with mature gardens of trees, hedges and lawns and wooded areas to the west.

2.3. **Identification and location of the trees:** The trees in question are plotted as individuals and a group on the site plans included as *appendices* with details recorded in the tree schedule.

Dead trees, trees of below 75mm trunk diameter at 1.5m height or trees and large shrubs that have little or no landscape or amenity value either now or in the future have not been included within this survey.

2.4. **Restrictions:** A search of the I.O.W. Council GIS Mapping web site in April 2021 indicated that the trees surveyed within the garden site are not subject to any Tree Preservation Order (TPO) or Conservation Area restrictions, however there is a woodland TPO to the west of the site. As the boundary of the woodland order is not specific on the web site plan there is a possibility that the tree referred to as T1 may fall within the woodland TPO area and as such this should be verified with the Local Planning Authority prior to any works to this tree outside of any planning approval.

Explanatory Notes

- **Species:** I base the species identification on visual observations and list the common English name of what the tree appeared to be first, with the botanical name after in italics. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. If I am unsure of the precise species of tree, I indicate the botanical name followed by the abbreviation sp indicating only the genus is known, in order to avoid delay in the production of the report. The species listed for groups and hedges represent the main component and there may be other minor species not listed.
- **Measurements/estimates:** All height and branch spread measurements are estimates unless otherwise indicated. A diameter tape is used to calculate the stem diameter. In cases where the tree is inaccessible when the diameter is estimated. This will be indicated by a * before the measurement. Any other measurements specific to a site or a particular tree will be indicated by ** and referred to as *additional observations*.
- **Height:** I estimate height to the nearest meter.
- **Stem diameter:** These figures relate to 1.5m above ground level and I record them in millimeters rounded up to the nearest five millimeters. Where a tree branches into two or more stems below 1.5m the measurement is taken immediately above the root flare. 'M' indicates trees or shrubs with multiple stems.
- **Branch spread:** I pace out to the measurement from the centre of the trunk to the tips of the live lateral branches to the four compass points.
- **Crown height:** This is the height of crown clearance from ground level to the lowest branches.
- **Age Class:** I estimate age from visual indicators and I assess the grades of maturity as follows. Young = less than one third life expectancy. Middle aged = one third to two thirds life expectancy. Mature = trees within their last third of normal life expectancy. Overmature = trees towards the end of their last third of normal life expectancy that are in an obvious state of decline. Veteran = notably old or ancient tree of a particular species that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving the typical age range for the species concerned.
- **Health:** This refers to the physiological condition of the tree and is categorized as follows. Poor = obviously in poor health. Fair = some visible evidence of decline or lack of vigor. Good = Appears to be healthy and vigorous.
- **Structural condition:** Poor = obviously in a dangerous, or potentially dangerous condition. Fair = some visible defects, but no significant hazards. Good = sound, healthy condition.
- **Remaining contribution:** Estimated remaining contribution in years (e.g. less than 10, 10-20, 20-40, more than 40).
- **Grading:** Category U = trees unsuitable for retention. Category A = trees of high quality and value. Category B = Trees of moderate quality and value. Category C = trees of low quality and value. *Trees are further graded into subcategories 1-3 in compliance with the cascade chart for quality assessment in BS 5837:2012.*

3 TREE SCHEDULE.

Tree Survey: The results of the survey are recorded in the table below. N.B. *This table should be read in conjunction with the explanatory notes*

Tree No.	Species	Height	Stem Dia.	Branch Spread	Crown Height	Age Class	Health	Structural Condition	Preliminary Recommendations	Remaining Contribution	Grade
T1	English Oak <i>Quercus robur</i>	17M	980mm	N=7m S=14m E=10m W=11m	2M To the east	Mature	Good	Good/ Fair	Requires a Root Protection Area (RPA) radius from the trees centre of 10.8m.	>20/40yrs	A2
T2	Ash <i>Fraxinus excelsior</i>	7M	300mm	N=0m S=8m E=6m W=3m	0.5M To the south	Mature	Good	Fair / Poor Suppressed and hollow at base	Requires a Root Protection Area (RPA) radius from the trees centre of 3.6m.	>20/40yrs	C1/2
T3 Off site	Ash <i>Fraxinus excelsior</i>	15M	* 650mm	N=8m S=7m E=8m W=5m	2M To the east	Mature	Good	Good/ Fair	Requires an estimated RPA radius from the trees centre of 7.8m	>20yrs	B2
T24	English Oak <i>Quercus robur</i>	9M	650mm	N=5m S=5m E=5m W=5m	1.6M	Mature	Good	Fair Pollarded at 5m in height and re-grown.	Requires a Root Protection Area (RPA) radius from the trees centre of 7.8m.	>20yrs	B1

Tree No.	Species	Height	Stem Dia.	Branch Spread	Crown Height	Age Class	Health	Structural Condition	Preliminary Recommendations	Remaining Contribution	Grade
T25	Lawson Cypress 'Ellwoodii' <i>Cupressus lawsoniana</i> var: 'Ellwoodii'	11M	M 800mm	N=1m S=4m E=5m W=4m	1.2M	Mature	Good	Good	Requires a Root Protection Area (RPA) radius from the trees centre of 8m.	>20yrs	B2
T26	Lawson Cypress <i>Cupressus lawsoniana</i>	9M	M 700mm	N=3m S=3m E=3m W=3m	0.3M	Mature	Good	Good	Requires a Root Protection Area (RPA) radius from the trees centre of 7m.	>20yrs	B2
T27	Eucalyptus <i>Eucalyptus</i> Var:	N/A	N/A	N/A	N/A	N/A	N/A	Hollowing and decaying at the base.	Requires a Root Protection Area (RPA) radius from the trees centre of 7.8m.	N/A	U
T28 Off Site	English Oak <i>Quercus robur</i>	14M	* 800mm	N=9m S=9m E=9m W=8m	6M To the north	Mature	Good	Good/ Fair Pollarded and re-grown.	Requires an estimated RPA radius from the trees centre of 9.6m	>20yrs	B2
TA Off Site	Sycamore <i>Acer pseudoplatanus</i>	18M	M 1100mm	N=8m S=8m E=8m W=8m	4M	Mature	Good / Fair Bleeding bark possible Phytophthora infection	Fair	Requires an estimated RPA radius from the trees centre of 11m Monitor for future health.	20yrs	B1

4. ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA)

A study was carried out to consider, identify, evaluate and possibly mitigate the extent of direct and indirect impact on or from the trees that may occur as a result of any proposed new development being constructed on the site.

4.1 Tree Constraints.

- **Tree Categorizing:** The trees have been categorized using the BS 5837:2012 Cascade chart for tree quality assessment and these are given in the Tree Schedule and are shown on the plan included in the *appendix* and represented as a colour.
 - Light Green = Category A trees: trees of high quality and value.
 - ◆ Mid Blue= Category B trees: trees of moderate quality and value.
 - Grey = Category C trees: trees of low quality and value.
 - U Red = Category U trees: trees unsuitable for retention.

Subcategory Criteria: 1. Mainly arboricultural values.
2. Mainly landscape values.
3. Mainly cultural values including conservation.

- **Root protection areas:**
 1. The root protection areas (RPA) for the surveyed trees have been calculated and determined using the formulae provided in BS 5837;2012 and shown graphically on the *Tree Constraints Plans*. In its simplest representation it indicates this as a circle with a radius from the trees` centre, however BS 5837 also recognizes that a RPA is influenced by other on site factors and states in **5.2.4** that it *`may change shape but not reduce its area whilst still providing adequate protection for the root system`*. This can be due to, *`b) The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures and underground services)*.
- **Tree shadow/ shade:**
 1. There is only one major shade bearing tree to the south of the developments and this will only cover one of the properties for the mid-part of the day, therefore shade and shadow is not considered as a material constraint towards this development.
- **Crown Spreads:**
 1. The indicative crown spreads of the tree surveyed are shown on the *Tree Constraints Plans* included in the *appendix*. Any proposed development design must consider the proximity, dominance and possible nuisance to the building and its use from the crowns and branching system. The future crown spreads of the tree surveyed has also been considered in relation to the proposed development.

4.2 Tree Constraint Considerations: *General*;

On measuring and plotting the constraints of these trees, any development design and construction will need to consider any tree constraints. Any implications of this, from or to the trees must be considered and addressed. Possible solutions for this within BS 5873 may be:

A) Removal of the tree. This may be acceptable for category 'C' trees as BS 5837 states that "C category trees will not usually be retained where they would impose a significant constraint on development," however this may not be reasonable for higher category trees or 'C' grade trees or groups which may be retained for other reasons e.g. screening.

B) The re-positioning of the proposed development to outside the constraint.

C) To use construction methods which minimize the impact to the rooting system, this may be in the form of footings more radial to the tree roots, or sheathed micro-pile with footings- beams, slabs, suspended floors laid at or above ground level and cantilevered as necessary to avoid major tree roots.

These conditions should also applied to kerb edges, driveways and hard landscaping, by using a three dimensional cellular confinement system, e.g. 'Celweb' to minimize compaction and maintain porosity to both water and gasses. Any impervious surface or covering (construction) to be installed over a RPA must cover no more than 20% of any tree total RPA area and in a tangential strip no wider than 3 meters. If this is exceeded then a system of irrigation to the covered area is to be provided, to compensate for the loss of 'open' root feeding area.

Any trenching for underground services will need to comply with National Joint Utilities Group (NJUG). *Guidelines for the planning, installation and maintenance of utility services in proximity to trees.*

Soil level changes, both lowering, or raising within a RPA should be kept to a minimum with any infill generally kept light and un-compacted.

D) To include within the development design elements which will minimize the affects of a current or future tree constraint, which may put future pressure on the tree to either be removed or pruned beyond what would be considered reasonable to maintain its amenity value and health, for example, to position windows or areas of high occupancy away from heavy shade or long periods of shadow.

NOTE i). With all the given current information and considering the longer term prospects of a tree in conjunction with the development the Planning Authorities may agree it suitable to remove a tree and replant with a species more suited or in a position more acceptable to the development.

4.3 Tree Considerations: *Items*;

The Town & Country Planning Act 1990 requires trees on or near development sites to be part

of the material considerations within the planning process. The Local Planning Authority (LPA) is also **obliged**, to take steps, through the use of TPO's and Planning Conditions, and where it is considered appropriate, to retain and protect trees on development sites and to ensure the planting of new trees if considered necessary.

- **Tree Removals:**

1. The development will require the removal of the trees indicated as T2, T24, T25, T26 with T27 recommended to be removed regardless of any development due to its structural condition.
2. All of the trees are internal to the site and not viewed from a wider location, so their removal will have limited impact on the wider amenity landscape.
3. The tree removals can be mitigated by the planting of new trees in conjunction with the development.

- **Crown Spreads:**

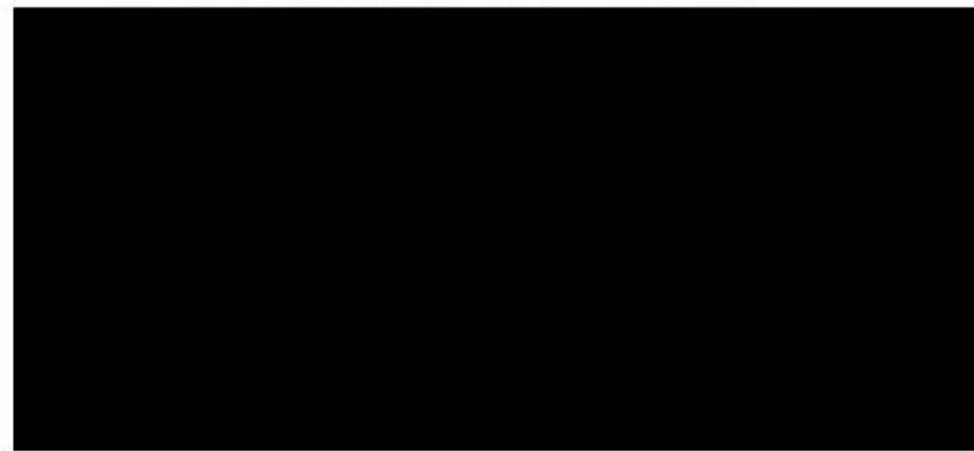
1. The current crown spread of the adjacent trees will encroach towards the development and over two of the bungalows.
2. The crown height of T28 will be suitably above the height of the bungalow.
3. T1 will require its' crown height to be pruned to lift it to a suitable height above the adjacent bungalow, approximately 6-7m in height.
4. Any future growth from these trees can be pruned back away from the development as reasonable garden maintenance works and will not be detrimental towards the trees or the wider visual amenity landscape.

- **Root Protection Areas:**

1. The root protection area (RPA) for the surveyed trees has been calculated and determined using the formulae provided in BS 5837; 2012.
2. It indicates that the proposed development of the driveway and two of the bungalows are partially within the RPA of the retained trees T1, T3 & T28.
3. Root sensitive construction methods and specialized foundation designs will be required to build within these areas to protect and maintain a viable rooting system for the continued health of the trees.

5. CONCLUSIONS:

- 1 If root sensitive construction methods and development precautions to protect and manage the trees are further detailed and specified within an Arboricultural Method Statement and implemented in conjunction with the construction of the development, the development will be compatible with the local landscape amenity in the future.



Mick Jones. Cert Arb. RFS.

Appendices

TREE CONSTRAINTS PLANS 1:250@A1

**Tree Categories,
Root Protection Areas,
Crown Spreads.**

PROPOSED SITE PLAN



NOTES.

1. Tree Root Protection Areas have been added to survey drawing as supplied.
2. This drawing should be read in conjunction with the written Tree Report and associated Schedules

KEY.

- GRADE "A" TREE (HIGH GRADE TREES)
- ◆ GRADE "B" TREE (MEDIUM GRADE TREES)
- GRADE "C" TREE (LOW GRADE TREES)
- ⊂ GRADE "R" TREE (TREE TO BE REMOVED)
- GRADE "B" GROUPS CONTAINING "C" GRADE
- GRADE "A" TREE CONTAINING "B" GRADE
- ROOT PROTECTION AREA
- ⊗ INDICATIVE CROWN SPREAD
- ⊘ TREE TO BE REMOVED
- ▨ INDICATIVE SHADE RANGE

Issue	Amendment	Date
Contractors must verify all Dimensions on site before commencing any works or making any shop drawings.		


M Jones Arborist IW LTD.
The Professional Tree Service for the Isle of Wight
 Telephone (01983) 520075 Email admin@treearwiplex.com

Contract
 12 Landguard Manor Road
 Shanklin
 Isle of Wight

Title
 TREE CONSTRAINTS PLAN
 SHOWING EXISTING LAYOUT

Scale 1:250	Dwg No TCP/S/01.
Date Mar 2021	

This drawing as 1:250 at A1