Andrew Gale Tree Surgery

34 Carpenters Meadow Pulborough
West Sussex RH20 2HQ
01798 875731
office@andrewgale.co.uk

Tree Survey & Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan

Location	4 Southleigh Road Havant Hampshire PO9 2RS	Andrew Gale Tree Surgery Ref: AR-063-18
Client	Dr Robinson H Scientific Birch House Parklands Business Park Forest Road DENMEAD PO7 6XP	Date of Report 1st March 2018
Report Prepared by	Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*	Date/s of Inspection 22nd February 2018
Survey Inspector	Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*	Number of Pages 16

Local Authority	Havant Borough Council
Contact	Jamie Gargett - 02392446514

Instructions
ISSUED BY: Dr Robinson TERMS OF REFERENCE: To survey the subject tree in order to assess their general condition and to provide a planning integration statement for the proposed development that safeguards the long term well being of the tree in a sustainable manner

Summary

The proposal is to construct a new drive utilising a 'no-dig' method.

No trees will require removing, consequently the landscape impact is low.

The tree will be afforded protection in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations which will safeguard the long-term well-being of the retained trees.

The proposal is satisfactory and sustainable in arboricultural terms.

CONTENTS

		Page Number
1.0	Introduction	4
2.0	Scope of Report	4
3.0	Survey Method	4
4.0	Site Description	5
5.0	Subject Trees	6
6.0	The Development	7
7.0	Arboricultural Impact Assessment [AIA]	7
8.0	Arboricultural Method Statement & Tree Protection	8
9.0	Conclusion	10
10.0	Terms & Definitions	10
11.0	Limitations & Qualifications	10
	Appendices	
	1 – Tree Survey	12
	2 – No-dig driveway construction	15

1.0. Introduction

1.1 Andrew Gale Tree Surgery has been instructed by Dr Robinson to advise on the arboricultural matters regarding a proposed new drive at 4 Southleigh Road Havant.

1.2 Andrew Gale Tree Surgery's brief was to draw up an Arboricultural Implications Assessment [AIA] for the existing tree/s on the site and neighbouring land as per British Standards 5837:2012 Trees in Relation to Design, Demolition & Construction – Recommendations [BS5837:2012] to ensure that retained trees are protected during the life of the development.

1.3 A Tree Condition Survey was undertaken and the constraints determined prior to the formulation of any design proposals for the site to aid and inform the client and accompany the planning application; please see 3.0 Survey Method for a detailed explanation of the processes involved.

1.4 The Tree Condition Survey assessed the condition of the trees in question, categorised them in line with the BS5837 cascade chart and provided a Root Protection Area [RPA] as per BS5837 Table D.1

1.5 The Tree Condition Survey/ Cascade chart is located within Appendix 1.

2.0. Scope of Report

2.1 This report addresses the arboricultural issues relating to the proposed new drive at the above location.

2.2 The purpose of this report is to comment on the arboricultural implications of the proposed new drive and to aid the preservation of the retained trees within and adjacent to, the site during construction. This will be achieved by setting out tree protection methods, construction techniques and working practices that are to be adopted on the site.

2.3 If all the guidelines and principles described within this report are NOT adhered to, there is a risk that the activities associated with a construction site could cause the damage and potentially death of the retained trees. Damage to the trees will significantly increase the risk of their health declining and may increase the risk of their partial or complete failure.

2.4 The success of the recommendations set out in this report are dependent on the construction company adhering to the principles laid out within, which are to be approved and enforced by the Local Planning Authority [LPA]. If the recommendations contained within this report are acceptable to the LPA, then we would advise that they are controlled by the standard planning conditions and arboricultural supervision at key stages of the development.

3.0. Survey Method

3.1 All trees were subject to ground level visual assessment of external features in line with the 'Visual Tree Assessment' method described by Mattheck & Breloer (Body Language of Trees, Department of the Environment Research for Amenity Trees publication No. 4 1994).

3.2 The lower stem of each tree was also tapped with a plastic headed hammer, as an initial assessment of decay, and clefts in the base of the stem probed with a steel rod to check for

decayed roots. The principal objective of the survey was to identify trees, or parts of trees, which appear to be in a hazardous condition and to advise remedial action to ameliorate the risk they could represent.

3.3 No tissue samples were taken and no internal investigation of the subject tree/s undertaken.

3.4 No soil samples were taken; however, using the British Geological Soil Drift Maps it has been possible to ascertain the site is that of a London Clay Formation soil.

3.5 Common names for the trees species have been used; where no common name exists, scientific names were be used.

3.6 The height [H] of the trees were measured in metres [m] using a TruPulse digital clinometer.

3.7 The stem diameters [SD] were measured in millimetres [mm] at 1.5m above ground level, and from the highest side if located on a slope, using a diameter tape.

3.8 The crown spread was measured by using a Leica Laser Range finder and the cardinal points used as direction, i.e. N, E, S & W.

3.9 The following documentation was provided prior to the commencement of the site survey:

- Instruction from Dr Robinson
- An un-numbered site plan drawn up by Dr Robinson

4.0. Site Description

4.1 The property is off Southleigh Road, a one-way street off Emsworth Road.

4.2 Southleigh Road is approximately 300mm lower than the garden of the property.

4.3 At the southern end of the garden is a garage the same level as the road; a step leads up into the garden

4.4 The tree is located along the eastern boundary wall beyond which is a car park

4.5 No description of the soil type or underlying ground type has been provided.

4.6 To minimise damage to the tree(s) as a whole, the following General Tree Protection Measures should be adhered to:

- Do not raise or lower soil levels or strip topsoil from within the RPA of the trees – not even temporarily
- Avoid disturbing the natural water table level
- Do not light fires within the RPA of the trees
- Do not attach notice boards, telephone cables or other services to any part of a tree
- No construction materials should be stored within root protection areas. Toxins such as diesel, petrol or cement should be suitably stored to prevent such substances leaching into the soil

4.7 It is essential that prior to any arboricultural or development work commences the site is checked for nesting birds, bat roosts, badgers and hibernating animals such as such as hedgehogs under tree, as negligent disturbance is an offence under the Wildlife & Countryside Act (1981) as amended, the EC Habitat Directive 1992 and CROW Act 2000. The Conservation of Habitats and Species Regulations 2010 includes as an offence *any* damage or destruction of a breeding site or resting place of European Protected species, mainly bats in a tree context.

5.0. Subject Trees

5.1 The site plan provided (no drawing number) shows the location of the tree.

5.2 In order to provide a systematic, consistent and transparent evaluation of the trees included in this survey, they have been assessed and categorised in accordance with the method detailed in section 4.5 of BS5837:2012 'Trees in relation to Design, Demolition and Construction – Recommendations.'

5.3 The tree surveyed, and in accordance with BS5837:2012, has been categorised as (Please see Appendix 1 for BS5837:2012 Cascade chart categorisation)

- A1

5.4 A summary of the surveyed tree are found within Table 1 below:

Table 1 – Schedule of Subject Trees

Tree No.	Species	H	SD	Age	BS5837:2012 Radius/RPA	Comments	BS5837:2012 Category
T1	Tre of Heaven	15.5	850	M	10.20m/327m^2	The tree is in GOOD Physiological and GOOD structural condition. Appears to have only minor pruning works carried out in the past. Minor attached deadwood in crown with a larger section of deadwood which has failed and is suspended within the lower portion of the crown. The tree is growing very close to the eastern boundary retaining wall; cracks are beginning to appear on the eastern side of the wall	A1

5.5 At the time of viewing, the tree requires minor work to remove the section of failed deadwood that is still within the crown and removing the stub back to the correct pruning point in line with BS3998:2010 Tree Work – Recommendations.

6.0. The Development

6.1 The proposed development is for the construction of a drive way within the RPA of the Tree of Heaven.

6.2 A new access will be generated along the west fence line with Southleigh Road with a ramp leading up to the new parking area.

6.3 A retaining wall is to be built within the garden adjacent to the west fence line.

7.0. Arboricultural Impact Assessment

7.1 The Proposal

7.1.1 The construction of a new drive way to the south of the tree.

7.1.2 The creation of a new access off Southleigh Road with a ramp from road side up to the new drive area.

7.1.3 The new drive area will be inside the RPA of the Tree of Heaven

7.2 Access

7.2.1 Access for all machinery items will be via the existing gated entrance or via the opening generated for the new vehicular access point.

7.3 Demolition

7.3.1 Demolition of the existing wall will have minimal impact on the rooting system of the tree.

7.4 Construction

7.4.1 The new drive way area will be within the RPA of the tree and as such a 'No-Dig' cellular system should be utilised – this will be compliant with BS5837:2012 Sec. 7.4.2.

7.4.2 Due to the height difference between Southleigh Road and the level of the new drive area, an access ramp will be required; this should be hand dug and any roots exposed pruned in accordance with BS3998:2010 Tree Work – Recommendations Sec. 8.6.

7.4.3 The material used for the surface of the new drive area should be permeable to allow water and nutrients to pass and for gaseous exchange to occur.

7.5 Implications of Sloping Ground

7.5.1 The area of the new drive is level; therefore, there is no need for level changes to occur within the RPA except this mentioned above.

7.6 Requirement for Tree Protection Fencing

7.6.1 Due to the nature of the build there will be no need for protective fencing; however, it should be made aware to the persons carrying out the construction that NO fires should take place within the RPA.

7.7 Site Compound

7.7.1 The existing garage provides adequate internal space for material and machinery storage.

7.8 Phasing of Works

7.8.1 The development involves the integration of a number of factors that could affect the tree; for this reason the construction must be carefully planned and phased to ensure the highest level of protection for the retained tree at all times.

7.9 Monitoring

7.9.1 In line with BS5837:2012 s.6.3, the site and associated development should be monitored regularly by a competent arboriculturist to ensure compliance to the arboricultural aspects of the planning permission

7.10 Post Development Implications

7.10.1 Other than remedial pruning works to branches that may overhang the new drive area there will be no reasonably predictable post development pressure from an arboricultural perspective.

7.10.2 Trees are dynamic, living organisms and as such their interaction with the environment can alter their structural integrity over time; therefore it is recommended that all trees are inspected regularly.

8.0. Arboricultural Method Statement and Tree Protection Plan

8.1 Establishing the Tree Protection

8.1.1 No vehicle or machinery will enter the site until the no-dig cellular system has been installed.

8.1.2 No fires or material storage will occur within the RPA of the tree.

8.2 Plant and Machinery Storage

8.2.1 The garage will act as storage for any plant or machinery used, the floor of which is lower than the garden level, therefore there will be no need for a bunded storage unit.

8.3 Storage of Building Materials and Spoil

8.3.1 The residue from the demolition must not be stored within the RPA of the tree; where this may be anticipated, materials such as bricks will be stored off the ground on a pallet to reduce the loading within the RPA.

8.3.2 Materials that, should they spill or leak, will be stored within the garage and away from the RPA.

8.4 Levels and Excavations

8.4.1 No level changes are anticipated within the RPA except for the ramp where the new drive enters Southleigh Road.

8.4.2 The footings for the low retaining wall will be hand dug; in the unlikely event that roots greater than 25mm in diameter may be exposed, particular care will be taken to avoid damage.

8.4.3 Where roots are exposed, a damp cloth will be wrapped around the exposed roots to minimise the risk desiccation; these wrappings must be removed prior to infilling of soil

8.4.4 Where this does occur, sharp sand will be placed around the roots prior to the soil replacement; advice must be sought from the site arboriculturist for clarification over any matters arising from. Builder's sand must not be used due to the high salt content and the sharp sand must be free from contaminants and objects

8.5 Hard Surfacing within the RPA

8.5.1 The design of the new drive will comply with the principles of the Arboricultural Advisory Information Services (AAIS) Practice Note 12 'Through the Trees to Development' – see Appendix 2

8.5.2 The existing turf layer shall be killed using a Glyphosate based herbicide and the dead vegetation removed by using a rake, alternatively the turf can be removed by hand.

8.5.3 The existing path running parallel with the garage will be lifted and the sub-base removed using hand tools.

8.5.4 To establish a level base for the geo web cellular confinement system, an encroachment down into the RPA may be required; smaller diameter roots (no greater than 25mm in diameter) shall be pruned to leave a clean cut. If larger diametre roots are located, advice must be sought from the site arboriculturist prior to any action being taken. The excavation must be carried out by hand or by a compressed air displacement tool to minimise unnecessary damage to the retained roots.

8.5.5 The proposed drive will require an edge of tanalised timber for the No-Dig drive to butt up to; the edging will be pegged into position.

8.5.6 Once the edging has been established, a geo-textile base will be laid and a permeable surface infilled to allow for gaseous exchange, water and nutrient percolation to the roots below.

8.5.7 If grass is to be laid the cellular confinement system must be filled with a suitable soil and grass seed applied; the geo-textile must be used to prevent pollution contaminating the soil beneath.

8.5.8 The ramp construction will require excavation into the RPA; Sec. 8.5.4 must be observed.

9.0. Conclusion

9.1 To conclude, the proposed drive way will not have a significant impact on the Tree of Heaven.

9.2 It will not be necessary to fell or severely prune the tree to accommodate the drive.

9.3 Access to the site will not impact on the Tree of Heaven.

9.4 The tree will not suffer because of the proposal.

10. Terms & Definitions

Arboricultural Impact Assessment

An evaluation of the direct and indirect effects of the proposed design and where necessary, mitigation recommendations

Arboricultural Method Statement

The method for the implementation of any aspect of the development that is within the root protection area, or has the potential to result in the loss or damage, above or below ground, to a tree shown for retention

Root Protection Area

Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the trees viability, and where the protection of the roots and soil is treated as a priority

Tree Protection Plan

A scaled drawing with informed descriptive text where applicable, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures

Arboriculturist

A person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction

Competent Person

A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

11. Limitations & Qualifications

Tree Inspections are subject to the following limitations and qualifications

General Exclusions

Unless specifically stated, the report will only be concerned with above ground inspections; no subterranean inspections will be carried out without the prior confirmation from the client that such works should be undertaken

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third party data will

be undertaken; Andrew Gale Tree Surgery will not be responsible for the recommendations within this report where essential data has not been made available, or are inaccurate.

This report will remain valid for one year from the date of inspection; it must be accepted that the recommendations proposed within this report may become null and void by extreme weather events, or any other unforeseeable actions.

Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*

1st March 2018

Appendix 1 Tree Survey

Table 1 – Tree Survey

Site Address	Clients Name	Surveyor	Survey Number	Date	Local Planning Authority & Contact	
4 Southleigh Road Havant PO9 2RS	Dr Robinson Birch House Parklands Business Park Forest Road Denmead PO7 6XP	Andrew Gale *Dip Arb L6 (ABC) M.Arbor.A*	AR/063/18	22/2/18	Havant Borough Council Jamie Gargett - 02392446514	
					Page number	1 of 1

Tree No.	Species	H	SD	Crown Spread				H of		Life Stage	Phy/logical Condition	Structural Conditions	Preliminary Management Recommendations	Years left	BS Category
				N	E	S	W	1st Br	Crown						
T1	Tree of Heaven	15.5	855	9	9	6.7	7	3.6	5.0	M	GOOD	The tree is in GOOD Physiological and GOOD structural condition. Appears to have only minor pruning works carried out in the past. Minor attached deadwood in crown with a larger section of deadwood which has failed and is suspended within the lower portion of the crown. The tree is growing very close to the eastern boundary retaining wall; cracks are beginning to appear on the eastern side of the wall	Remove suspended section of deadwood	20+	A1

Key to the Tree Survey

Tree No. – Identifies tree on plan.

Tree Species – Common names are given to aid understanding for the wider audience

Height – Height of tree [m]

Stem diameter – Diameter of trunk measured at approximately 1.5m above ground level [mm]; please Figure C.1 of BS5837:2012 for an explanation

Crown Spread – Overall size of crown N, E, S, W [m]

Height to First Branch and Orientation [H of 1st BR] – Clear distance between ground level to first significant branch including direction of growth; AR = All Round [m]

Height of Crown Clearance [H of Crown] – Clear distance between ground level to approximate height to base of crown [m]

Life Stage –	Young	Y any tree up to SM
	Semi Mature	SM – less than 1/3 of expected life span
	Early Mature	EM – between 1/3 & 2/3 of expected life span
	Mature	M – between 2/3 and expected life span
	Over Mature	OM – older than M

Physiological & Structural Condition –	GOOD	no significant health problems, or no significant structural problems
	FAIR	some symptoms of ill health, or significant structural problems
	POOR	significant symptoms of ill health, or significant structural problems
	MORIBUND	(physiologically only) in a serious and irreversible decline
	DEAD	(physiologically only) not alive

Preliminary Management Recommendations – Recommendations pertaining to the tree in question; will not specify items of an aesthetic nature

Years Left – Approximate length of time the tree will contribution provide a contribution in years

BS Category based on the Cascade Chart for Tree Quality – Table 1 of BS5837:2012

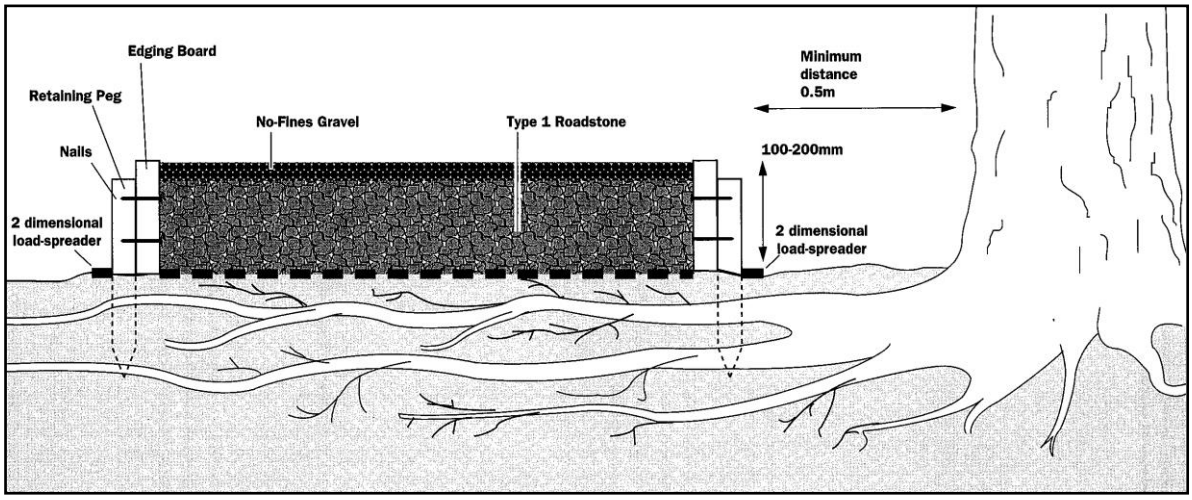
Trees can be divided into one of the following categories –

U	Less than 10yrs value and therefore could be removed
A	High quality and value. (Min of 40yrs value remaining)
B	Moderate quality and value. (Min of 20yrs value remaining)
C	Low quality and value (Min of 10yrs value remaining)

1	Mainly arboricultural values
2	Mainly landscape values
3	Mainly cultural/conservation values

Appendix 2 No-Dig Driveway Construction

Three-dimensional cellular confinement system for minimal dig construction



Final surfacing

The benefits of the CellWeb™ system to trees can only be maintained if a suitably porous final surface is selected. An ideal surfacing is the DuoBlocks grass reinforcement and gravel retention system, a visually attractive surface that has the advantage of being fully porous. Alternatives include block paviors, porous asphalts and loose or bonded gravel.

Call the Geosynthetics sales team on 01455 617 139 for more advice on surfacing options and other products and systems.

Advice and product selection

Geosynthetics Limited has been supplying the CellWeb™ system for many years and has acquired solid experience in its application. No two contracts are the same, and we understand the factors that need to be taken into account to specify the right CellWeb™ product.

We provide a FREE consultation, design and advisory service to find the solution that is most cost-effective and beneficial for your site. Our service includes product selection, CAD drawings and full instructions to help you from project conception to completion.

Call our sales office on 01455 617 139 for specification details and project-specific design assistance.

CellWeb™ in action:
Access road for the Lake District National Parks Authority.

Site before construction pictured above.

Installation of the CellWeb™ system.

Four years later.