PERMIT

APArboriculture

Arboricultural Report

Relating to:

Seacourt (Land adjacent to 202 Seafront), Hayling Island, Hampshire PO11 9HR

Tree Survey	✓
Arboricultural Implications Assessment	✓
Arboricultural Method Statement	✓

Produced For: Mr I Snell

Date: 23rd June 2011

Prepared By:

Andrew Pinchin BSc(Hons), Dip Arb (RFS), FArborA, MICFor - Chartered Arboriculturist

APArboriculture **Tel. 07921 063 171**
www.aparboriculture.co.uk

Ref: APA/AP/2010/065

Contents Section

Introduction **1**

- Overview 1.1
- Contact List 1.2
- Key Terms and Abbreviations 1.3
- The Proposal/Relevant History 1.4
- Brief and Purpose 1.5
- Scope 1.6
- Documents Supplied and Used 1.7
- Site Details 1.8

Tree Survey **2**

- Dashboard Summary (Trees) 2.1
- Survey Method 2.2
- Tree Details 2.3
- Legal Protection Status of Trees 2.4

Arboricultural Implications Assessment **3**

- Dashboard Summary (Implications) 3.1
- Trees to be Removed 3.2
- Tree Pruning Works 3.3
- Incursions into RPAs 3.4
- Light and Proximity Issues 3.5
- Mitigation 3.6
- Conclusion 3.7

Arboricultural Method Statement **4**

- Introduction 4.1
- Pre-Commencement Meeting 4.2
- Sequencing and Inspection/Supervision 4.3
- General Site Precautions 4.4
- Carrying out of Tree Works 4.5
- Tree Protective Fencing and Ground Protection 4.6
- Site Access and Hard Surfacing 4.7
- Demolition 4.8
- Underground Services 4.9
- Foundations and Construction 4.10
- Fencing and Landscaping 4.11
- Amendments 4.12

Appendices

Appendix 1 – Tree Survey Schedule

Appendix 2 – Tree Protection Plan - Scale 1:100 at A1

Appendix 3 – BS5837:2005 Cascade Chart

Appendix 4 – Extracts from Section 11 of BS5837: 2005

This report is for the exclusive use of the client and those involved in the submission and approval of the planning application to which the report relates. It may not be sold, lent, hired out or divulged to any third party not directly involved in the subject matter without the express consent of APArboriculture

1.0 Introduction

1.1 Overview

- The proposal is to erect a single detached dwelling with integral garage
- There are 14 surveyed trees
- It is proposed to remove 4 trees (3 Category C trees and 1 Category R tree)
- It is proposed to prune 2 trees (crown cleaning only)
- There is an incursion of proposed vehicular hard surfacing into the RPA of 1 tree at the front of the site
- A bin store is proposed within the RPA of 1 tree at the front of the site
- There are no other incursions into the RPAs of retained trees
- The retained trees can all be afforded an adequate level of physical protection during the development works in accordance with BS5837: 2005

1.2 Contact List

Contact	Name	Company/LPA	Contact Number(s)	Report Issued to:
Client	Mr I Snell	-	-	✓
Planning Agent	Anna Smith	MAA Architects	020 8973 0050	✓
Arboricultural Consultant	Andrew Pinchin	APArboriculture	07921 063171	

1.3 Key Terms and Abbreviations

Arboricultural Implications Assessment - An assessment of arboricultural impact	**AIA**
Arboricultural Method Statement - Contains the tree protection information	**AMS**
British Standard 5837 2005: Trees in Relation to Construction – Recommendations – the relevant British Standard	**The BS**
Root Protection Area - The volume of soil a tree needs to stay healthy	**RPA**
Local Planning Authority - The Council	**LPA**
Tree Preservation Order - A legal document that is used by the LPA to protect trees	**TPO**

1.4 The Proposal/Relevant History

The proposal is to erect a single detached dwelling with integral garage and associated hard surfacing/ancillary structures.

1.5 Brief and Purpose

This report has been commissioned by Mr I Snell to;

- Survey the trees in accordance with the BS.
- Detail the arboricultural implications of the proposed project.
- Present an effective tree protection strategy for the duration of the development.
- Provide the necessary arboricultural information to accompany a planning application to Havant Borough Council.

1.6 Scope

The trees have been surveyed in accordance with the BS. Trees on and immediately adjacent to the site with a stem diameter over 75mm have been included.

The report is designed to fulfil the recommended criteria for the provision of arboricultural information in validating planning applications (ref. Department for Communities and Local Government Circular 02/2008 and the associated guidance document entitled 'Validation of Planning Applications'.)

A full hazard assessment of the trees (including the assessment of decay or defects and their implications), has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have, however, been identified in the Tree Survey Schedule and appropriate works recommended for action.

Recommendations have been made for further investigative works to be undertaken where appropriate. These include climbing surveys and the use of specialist decay detection equipment.

Detailed ecological considerations are also beyond the scope of this report. UK and European wildlife legislation may affect the timing and enactment of works described in this report. Bats in particular may be affected when carrying out tree works. An ecologist should be consulted for further advice in this area.

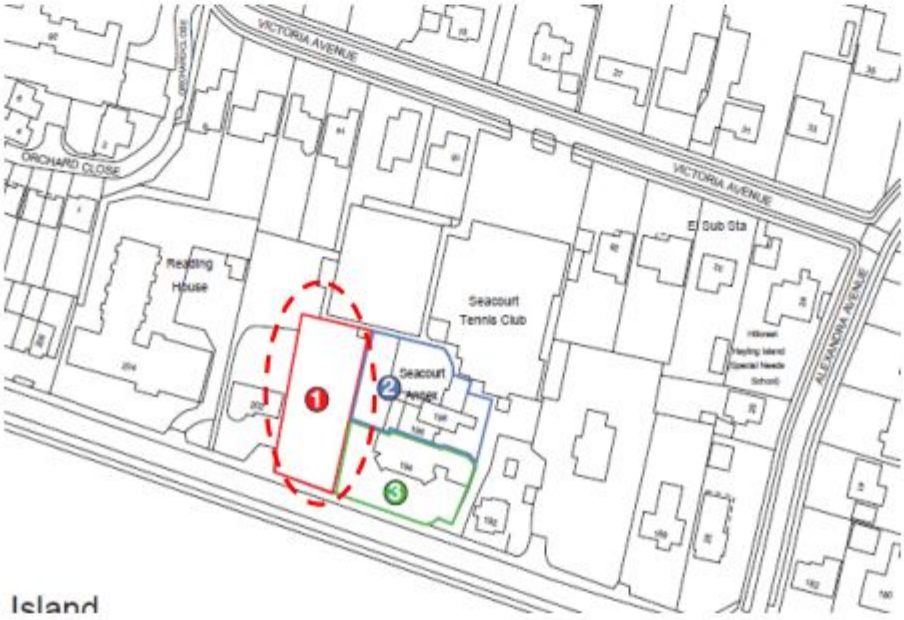
1.7 Documents Supplied/Used

Document	Obtained From	Format/Ref
Layout plans	MAA Architects	Dwg

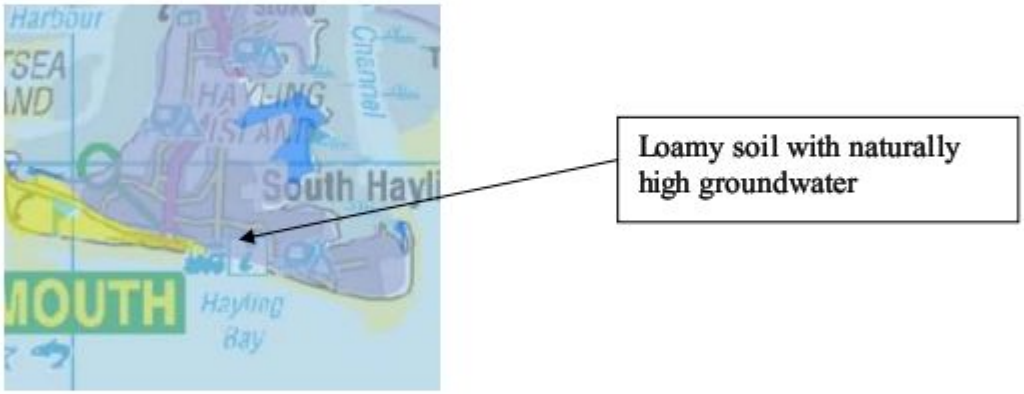
1.8 Site Details

The site in question is within the administrative jurisdiction of Havant Borough Council and lies on the northern side of Seafront in Hayling Island. In terms of levels, the site falls to the south.

Location Plan



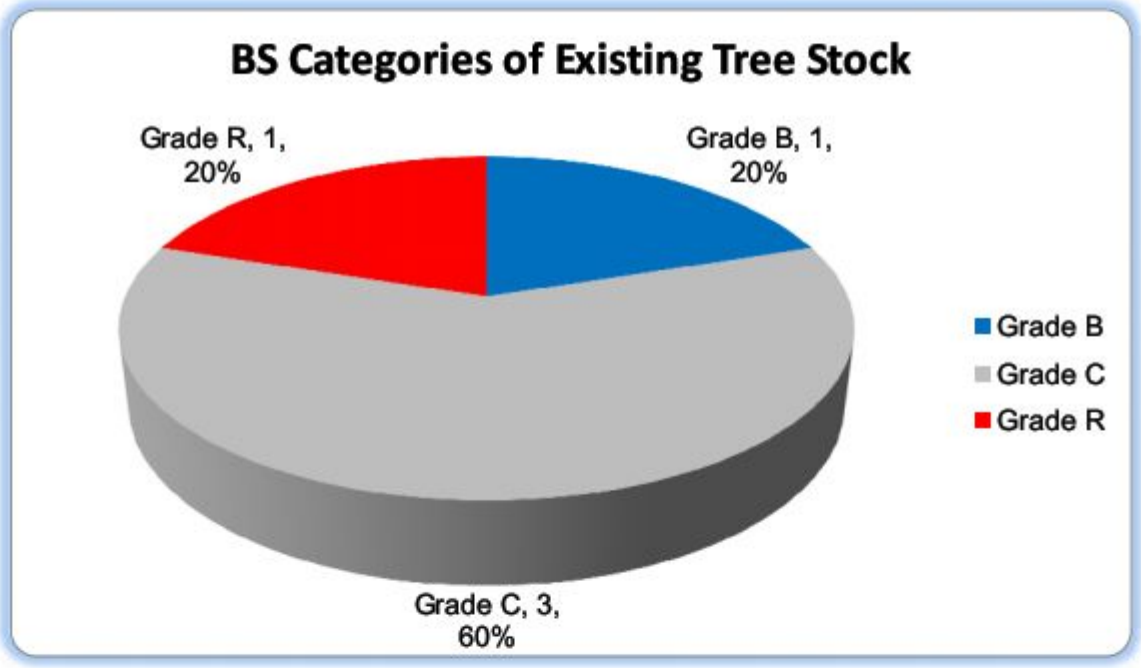
The Online Soilscapes Viewer provided by the National Soil Resources Institute indicates that the underlying soil type is a loamy soil with naturally high groundwater. This will be less vulnerable to compaction than soils with clay content.



2 Tree Survey

2.1 Dashboard Summary (Trees)

No. of Individual Trees	14
No. of Tree Groups	0
Total No. of Trees (Individual Trees + Trees in Tree Groups)	14



2.2 Survey Method

The trees were surveyed on 27th October 2010.

Locations of the trees were derived from the topographical survey provided (carried out by Solent Surveys in 2004). Cherry tree T14 was plotted using a laser measuring device.

The trees were inspected from ground level using widely accepted Visual Tree Assessment techniques. No climbing inspections were undertaken.

No samples of soil, tree tissue or suspected pests/pathogens were taken.

Heights of the trees were estimated by eye and crown spreads by pacing. Diameters were measured in mm using a diameter tape.

Single stemmed trees were measured at a height of 1.5m, with multi-stemmed trees being measured just above the root flare. In some cases, the average diameter of the stems is taken and multiplied by 12 as this can give a more realistic RPA radius. Where this method has been used, it will be made clear in the Tree Survey Schedule.

Photographs were taken on site using a digital camera.

2.3 Tree Details

The tree details and proposed works are presented in the Tree Survey Schedule (Appendix 1) and tree positions are shown on the Tree Protection Plan (Appendix 2).

The tree stock has been broken down by BS category (see Dashboard Summary). The categorisation system can be summarised as follows:

- **Category A** – trees of high quality and value with a life expectancy of more than 40 years
- **Category B**– trees of moderate quality and value, with a life expectancy of more than 20 years
- **Category C** – trees of low quality and value, with a life expectancy of more than 10 years
- **Category R** – trees for removal, with a life expectancy of less than 10 years

A cascade chart giving full details of the BS categorisation system is attached (Appendix 3).

The highest quality tree on the site is Category B Holm Oak T1. This is also the most visually significant tree as it is situated in a prominent location at the front of the site

View of Category B Holm Oak T1 from West



Category R Holm Oak T12 is dead and removal can be recommended irrespective of the current proposals for development. The remaining trees are all Category C trees of modest quality and landscape significance.

The RPAs of the trees are included in the Tree Survey Schedule in accordance with the BS. The RPA is the area (given in $m^{2)}$ that contains sufficient rooting volume for a tree to survive and remain healthy. Disturbance within this area has the potential to impact significantly upon tree health and vitality. Section 5.2 of the BS provides for the shape of the RPA to be modified from the starting point of a circle to account for site features where rooting may be restricted, as long as the total area remains the same.

Where individual open grown trees with no impediments to normal rooting are concerned, Section 5.2 of the BS also provides for the RPA to be offset by up to 20% in any one direction.

No RPAs have been modified or offset in this instance as this has not been considered appropriate.

2.4 Legal Protection Status of Trees

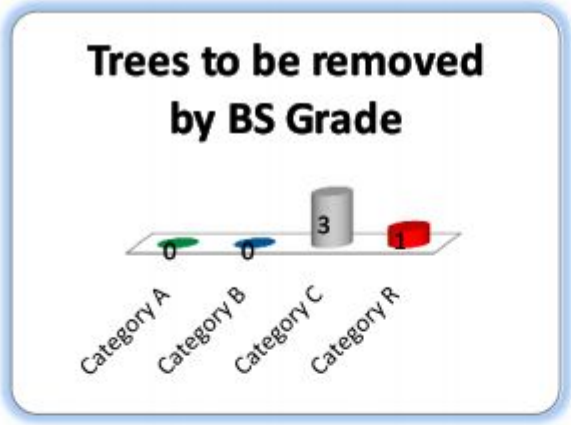
Type of Protection	Details/Ref.
Conservation Area	No
Tree Preservation Order	No

The above information was provided on the telephone by Havant Borough Council at 12.30pm on 27th October 2010. It is recommended that the current position be checked with Havant Borough Council prior to carrying out any tree works.

3 Arboricultural Implications Assessment

3.1 Dashboard Summary (Implications)





Total number of surveyed trees	14
Number of trees to be Removed	4
Number of trees to be pruned	2
Number of trees with incursions in their RPAs	1

3.2 Removal of Trees

Four trees are to be removed in the interests of good arboricultural practice and to facilitate the proposed development works. One of these trees (T12) is a Category R tree, the remaining trees (T2, T4 and T5) being Category C trees of modest quality and landscape significance. T2 is a small Cherry tree, T4 is a twin-stemmed Holm Oak with a poor structure and T5 is a poor, heavily topped

Maritime Pine. The trees are all situated towards the rear of the site and removal will not detract from the character and amenities of the locality.

3.3 Tree Pruning Works

The only tree pruning works proposed comprise crown cleaning of Holm Oaks T1 and T11. These works are minor in nature and extent and will not significantly affect the health or overall appearance of the trees.

3.4 Incursions into RPAs

Incursions may be fully invasive (where a degree of root disturbance is considered acceptable) or low invasive (where specialist methods are used to limit the degree of disturbance). The table below details the incursions and how they are to be dealt with:

Incursions into RPAs of Retained Trees		
Type of Incursion	**Trees affected**	**Action**
Incursion of new vehicular hard surfacing into RPA	T1	Low invasive surfacing to be used incorporating Cellular Confinement System. Installation to be carried out in accordance with Section 11 of BS under direct arboricultural supervision. No excavation to take place within RPA of tree & care to be taken at all stages not to compact the soil..
Construction of small bin store within RPA	T1	Low invasive foundation (concrete raft) to be used. To be installed in accordance with Section 11 of BS under direct arboricultural supervision

3.5 Light and Proximity Issues

Separation distances and relative orientations are such that the retained trees will block little sunlight to the proposed dwelling.

In terms of general proximity to trees, the proposal accords with Section 6.3 of the BS. It is not considered likely that the trees will come under pressure in the future to be heavily pruned or removed.

3.6 Mitigation

There will be scope for some planting of trees during the landscaping phase of the development and the LPA may wish to attach a landscaping condition to any forthcoming planning consent to ensure implementation of a suitable scheme. Planting of these trees will ensure continuity of tree cover and ensure that the character and amenities of the locality are maintained and enhanced.

3.7 Conclusion

Subject to full compliance with the AMS, the net arboricultural implications of the proposed scheme are relatively minor. The four trees to be removed are of modest quality and landscaping significance and the retained trees can be afforded an adequate degree of physical protection during the development works in accordance with the BS. Specified tree pruning works are minimal.

✓	Proposal Acceptable on Arboricultural Grounds

4 Arboricultural Method Statement

4.1 Introduction

To safeguard the retained trees on the site during the development process, the tree protection measures set out below will be adhered to. These will protect the rooting systems and aerial parts of the trees.

The essential principle is that the area inside the tree protective fencing and where ground protection has been used is to be protected for the duration of the works.

Any specialist methods referred to in this AMS are to be implemented in full and arboricultural inspection/supervision is to be carried out as detailed in the Sequencing and Supervision Section (Section 4.3).

References are made in this AMS to Section 11 of the BS (Demolition and construction in proximity to existing trees). Relevant extracts are reproduced in full at Appendix 4.

A copy of this AMS will be maintained on site at all times and made available to all site personnel.

All site personnel will be made aware of the key implications of this AMS. The Arboricultural Consultant can give a 'tool-box talk' to site personnel if required to ensure that the tree protection details are fully understood.

As of 2005, Local Planning Authorities have powers to serve Temporary Stop Notices if agreed tree protection measures are not carried out. Adhering to this AMS will ensure that such costly and time consuming action is avoided.

4.2 Pre-Commencement Meeting

A pre commencement site meeting, involving the Site Manager, the Arboricultural Consultant and the LPA Tree Officer will be held to ensure that all aspects of the tree protection process are understood and agreed. Any potential problems can be discussed at this stage, along with the intended sequencing of events and the

level of arboricultural supervision required. The Arboricultural Consultant will communicate a record of the meeting to all parties by e-mail.

4.3 Sequencing and Inspection/Supervision

Sequencing of events and effective arboricultural inspection/supervision are important elements of the tree protection process.

Works that have the potential to affect trees will be supervised by a suitably qualified and experienced Arboricultural Consultant.

The Arboricultural Consultant will make a record of any visits to the site and will communicate details of each visit to the Client and the LPA.

Key Stages:

- AMS issued to Site Manager/Building Company
- AMS to be read by all site personnel to ensure full understanding of implications. Any queries to be addressed by appointed Arboricultural Consultant
- Tree works carried out – removal of T2, T4, T5 & T12 and crown cleaning of T1 & T11.
- Tree Protective Fencing erected and Ground Protection installed*
- Construction works carried out
- New vehicular hard surfacing installed (could be installed prior to construction works if desired)
- Tree Protective Fencing and Ground Protection removed
- Landscaping carried out

*Tree Protective Fencing to be temporarily re-aligned under direct arboricultural supervision when bin store within RPA of T1 is constructed

Summary of Required Arboricultural Inspection/Supervision:

Activity	Level of monitoring/supervision required
Erection of tree protective fencing and installation of ground protection	Inspection of fencing and ground protection by appointed arboricultural consultant prior to works commencing
Installation of low invasive vehicular hard surfacing within RPA of T1	Direct supervision by appointed arboricultural consultant. Precautions to be taken as detailed in AMS
Construction of bin store (with concrete raft foundation) within RPA of T1	Direct supervision by appointed arboricultural consultant. Precautions to be taken as detailed in AMS

In addition to the direct arboricultural supervision detailed above, telephone contact will be maintained between the Site Manager/Building Company and the Arboricultural Constant to ensure that the development progresses smoothly and that compliance with the AMS is being achieved.

4.4 General Site Precautions

The following points will be observed at all times:

- No fires will be lit within 10m of the canopies of retained trees.
- No access will be permitted inside the tree protective fencing.
- No materials, equipment or debris will be stored within the tree protective fencing.
- Notice boards, telephone cables or other services will not be attached to any parts of retained trees.
- Materials that contaminate the soil (e.g. concrete mixings, diesel oil and vehicle washings) will not be permitted to enter the RPAs of retained trees.

4.5 Carrying out of Tree Works

All works will be carried out in accordance with BS 3998:2010 and to current arboricultural best practice. Tree works will be carried out by a suitably qualified and experienced Arboricultural Contractor holding the necessary insurance cover. A list of such contractors is available from the Arboricultural Association at www.trees.org.uk.

Care will be taken when carrying out the tree works not to compact the soil within the RPAs of retained trees. If any tree stumps are removed within the RPAs of retained trees, these will be carefully removed using hand tools or a stump grinder (this will apply if the stumps of T5 and T12 are removed).

The only tree pruning works proposed in this instance comprise crown cleaning of T1 and T11.

If at any time during the development a need for additional tree works is highlighted to facilitate the proposed works or access for machinery/plant, the Arboricultural Consultant will be contacted to advise on appropriate works and liaise with the LPA as necessary.

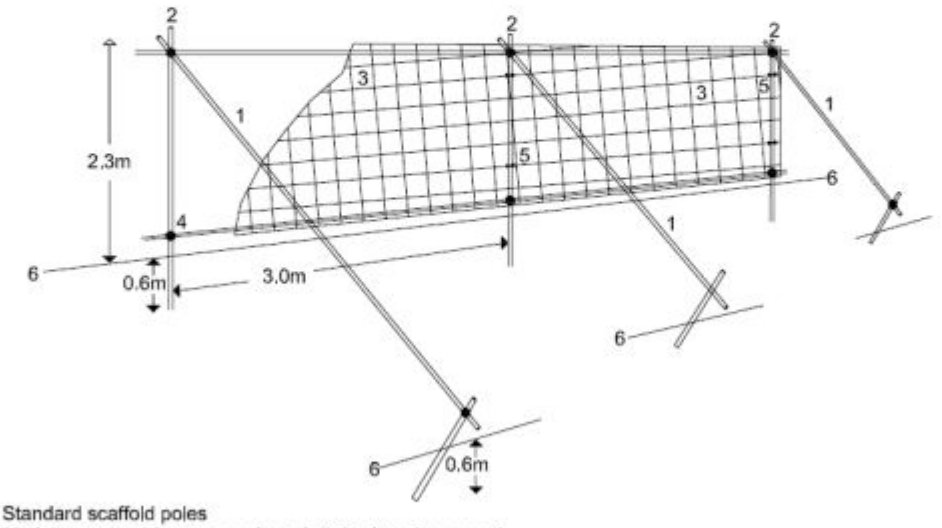
4.6 Tree Protective Fencing and Ground Protection

Tree protective fencing and ground protection are used to ensure that the RPAs of retained trees are safeguarded.

The required tree protective fencing is shown on the Tree Protection Plan (Appendix 2). The fencing will remain in position for the duration of the development and will only be moved/altered as agreed in writing by the LPA following arboricultural advice.

The Tree Protective fencing will be 2.4m Heras fencing as specified in the BS. The fencing will be supported by a scaffold framework with supporting struts firmed into the ground on the side of the trees. The purpose of the supports is to prevent the fencing being moved during the development. Clear signs will be attached to the fencing (e.g. Tree Protection Area – Keep Out!).

Tree Protective Fencing Specification - BS5837 2005



1 Standard scaffold poles
2 Uprights, to be driven approximately 0.6m into the ground
3 Wire mesh panels e.g. Herras panels to be wired securely to scaffold framework
4 Standard scaffold clamps
5 Wire twisted and secured on inside face of barriers to avoid easy dismantling
6 Ground level

Heras Tree Protective Fencing



Example of Suitable Sign

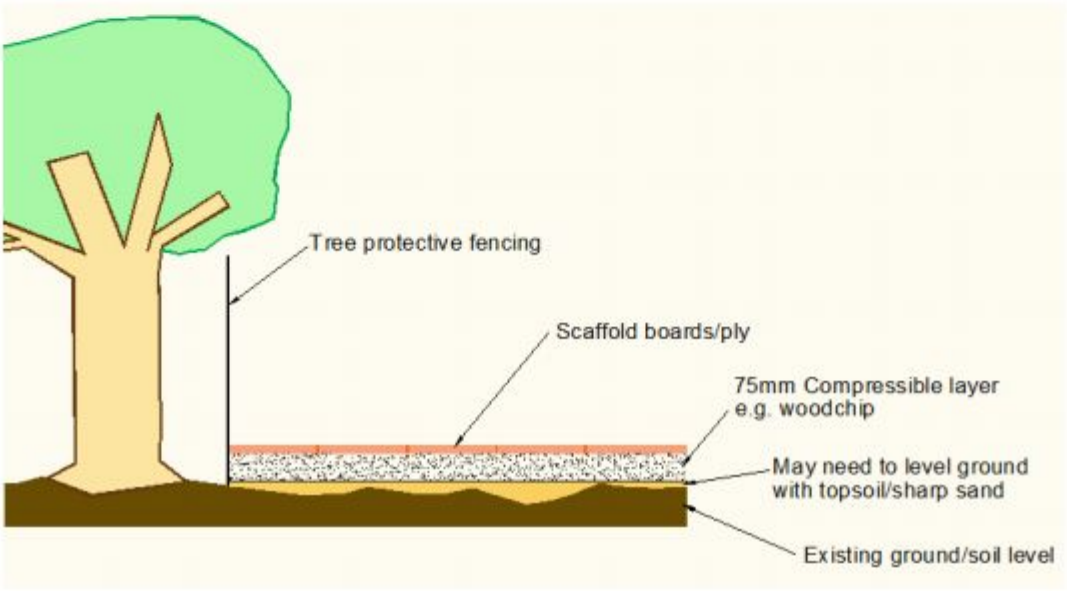


Ground protection has been specified to protect the RPA of T1. To accord with the BS, the specification will be as follows:

- A geotextile membrane on the ground

- 75mm depth of a compressible layer (woodchips or sharp sand)
- Side butting scaffold boards or plywood on top

Schematic of ground protection



4.7 Site Access and Hard Surfacing.

The proposed driveway is within the RPA of T1. A low invasive surface incorporating a Cellular Confinement System (CCS) is to be used, the depth of which will be ascertained following consultation with an engineer or the Geosynthetics Ltd design service. The surfacing is be installed in accordance with Section 11 of the BS under direct arboricultural supervision. No lowering of existing soil levels is to take place within the RPA of the tree and great care will be taken at all stages to avoid compaction of the soil.

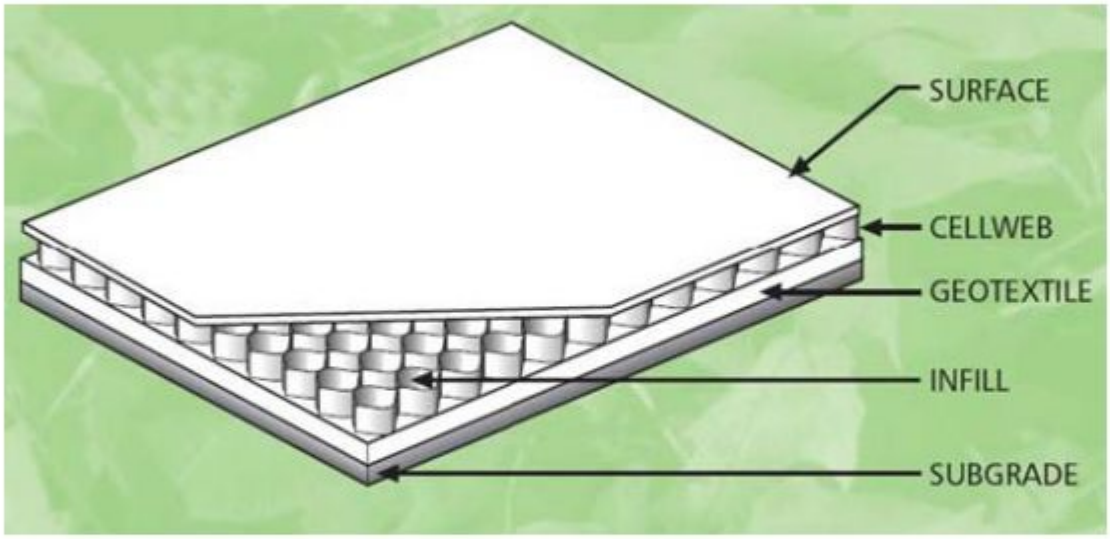
The ground will be levelled if necessary using sharp sand/top soil, following which a geotextile membrane will be applied. The CCS will be laid on the membrane and filled with no fines road-stone. The final surfacing will then be

applied. The final surfacing will be of a permeable nature as it occupies more than 20% of the RPA of the tree (ref. BS5837: 2005).

Installation of Cellular Confinement System (CCS) – Sequencing:

- Remove surface vegetation if necessary using a glyphosate based herbicide or with the use of hand tools. Compaction of soil to be avoided
- Level ground using sharp sand/top soil
- Apply geotextile membrane
- Lay the CCS – depth to be determined by an engineer or by reference to the Geosynthetics Ltd Design Service
- Fill CCS with no-fines road stone (ideal particle size 20-40mm diameter), ensuring that machinery/plant/vehicle use is restricted to areas where the CCS has been filled
- Install edging (e.g. boards or kerbs with concrete haunching) on geotextile membrane. Drilled kerbs may be retained using road pins
- Line with heavy gauge polythene if concrete used for edging
- Apply final surfacing (permeable in this instance because more than 20% of RPA is covered)

Illustrative cross section through Cellular Confinement System



Reproduced with the kind permission of Geosynthetics Ltd

4.8 Demolition

No demolition works are proposed in this instance.

4.9 Underground Services

No new underground services are to be installed within the RPAs of retained trees. If new services are to be brought in from the road, there is plenty of room to route these in such a manner as to avoid the RPA of T1.

4.10 Foundations and Construction

A small bin store is to be constructed within the RPA of T1. A low invasive foundation is to be used, comprising a concrete raft. Following temporary re-alignment of the Tree Protective Fencing, this will be constructed in accordance with Section 11 of the BS under direct arboricultural supervision. No excavation into existing soil levels will take place and care will be taken at all stages to avoid compaction of the soil.

The underside of the concrete foundation will be lined with heavy gauge polythene to safeguard the rooting environment of T1 from the potentially toxic effects of leaching cement.

If the development has not been completed when the bin store has been constructed, the Tree Protective Fencing will be re-aligned again in accordance with the Tree Protection Plan at Appendix 2.

4.11 Fencing and Landscaping

During the landscaping phase of the development, the following precautions will be observed:

- Soil within the RPAs of retained trees (and where new tree planting is proposed) will not be compacted
- There will be no changes in ground levels within the RPAs of retained trees

- Unwanted vegetation within the RPAs of retained trees will be removed manually or using contact herbicides that will not damage tree roots

- No underground irrigation or drainage pipes will be installed within the RPAs of retained trees

- If soil has been compacted in areas where tree planting is proposed, decompaction measures will be implemented to facilitate successful establishment.

If any fence posts are installed within the RPAs of retained trees, excavation will be carried under direct arboricultural supervision using hand tools. Posts will be re-positioned if roots in excess of 25mm in diameter are encountered. Post holes will be lined with heavy gauge polythene where concrete is used to safeguard the rooting environment of the trees from the potentially toxic effects of leaching concrete.

4.12 Amendments

Issues may arise on development sites that require amendments to the previously agreed tree protection details. Any amendments to this AMS will be approved in writing by the LPA prior to being implemented. Copies of paperwork relating to any amendments will be communicated by the Arboricultural Consultant to the Client and LPA.

Appendix 1

Tree Survey Schedule

APArboriculture
Tel: 07921 063 171

Tree Survey Schedule

Site: Seacourt (Land adjacent to 202 Seafront), Hayling Island, Hampshire PO11 9HR

Surveyed by: Andrew Pinchin

Date of Survey: 27th October 2010

Ref: APA/AP/2010/065

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Vigour	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Notes
T1	Holm Oak 1 Number	12	8 4 6 5	2	Mature	590 SS	12	7.1	Normal	Fair	Medium	B	1	20-40	Asymmetric crown Some poor pruning in past Dead wood in crown to 75mm diameter
Recommended Works/ Reason for Works:	Crown clean		Advisable for good arboricultural practice												
T2	Cherry 1 Number	9	4 4 5 4	3	Mature	350est SS	12	4.2	Normal	Fair	Low	C	1	20-40	Off site tree - close inspection of base not possible Dead wood in crown to 50mm diameter
Recommended Works/ Reason for Works:	Remove		To facilitate proposed development works												
T3	Turkey Oak 1 Number	13	6 4 5 3	4	Middle Aged	250 SS	12	3.0	Normal	Poor	Medium	C	1	20-40	Off site tree - close inspection of base not possible Mis-shapen stem Dead wood in crown to 50mm diameter
Recommended Works/ Reason for Works:	No works proposed														
T4	Holm Oak 1 Number	12	2 3 2 5	3	Middle Aged	700 MS	10	7.0	Normal	Poor	Medium	C	1,2	20-40	Twin-stemmed at base Dead wood in crown to 50mm diameter
Recommended Works/ Reason for Works:	Remove		To facilitate proposed development works												
T5	Maritime Pine 1 Number	11	0 7 6 8	2	Mature	600 SS	12	7.2	Moderate	Poor	Low	C	1,2	10-20	Heavily topped with very poor structure Dead wood in crown to 150mm diameter
Recommended Works/ Reason for Works:	Remove		To facilitate proposed development works												

Key:

1. Height - Estimated height of tree in metres
2. Crown Spread - Estimated crown spread in metres at the four cardinal points (N,E,S,W)
3. Ground Clearance refers to height of crown above existing ground levels
4. Age class of tree: Young, Middle-Aged, Mature, Over-Mature
5. Stem Diameter is measured in millimeters at 1.5m above ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem diameter may be estimated (est) where access is restricted or an average (avg) taken for groups of trees.
6. The protection Multiplier is 12 for single stemmed trees and 10 for multi-stemmed trees. It is used to calculate the root protection area radius
7. The Protection Radius is the radius of the root protection area of the tree
8. Vigour - Normal, Moderate, Poor, Dead
9. Structural Condition - Good, Fair, Poor
10. Landscape Contribution - High, Medium, Low
11. B.S. Category - British Standard 5837:2005: 'A' - High, 'B' - Moderate, 'C' - Low, 'R' - Remove
12. Sub Category - retention criteria values: 1 - Arboricultural, 2 - Landscape, 3 - Cultural including Conservational, Historic and Commemorative value
13. Useful Life - the tree's estimated remaining contribution to the landscape in years

APArboriculture
Tel: 07921 063 171

Tree Survey Schedule

Site: Seacourt (Land adjacent to 202 Seafront), Hayling Island, Hampshire PO11 9HR

Surveyed by: Andrew Pinchin

Date of Survey: 27th October 2010

Ref: APA/AP/2010/065

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Vigour	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Notes
T6	Holm Oak 1 Number	10	2 2 2 2	4	Young	200 SS	12	2.4	Normal	Fair	Low	C	1,2	>40	Drawn structure with narrow crown
Recommended Works/ Reason for Works:	No works proposed														
T7	Holm Oak 1 Number	12	7 4 5 5	4	Middle Aged	750 MS	10	7.5	Normal	Poor	Medium	C	1,2	20-40	Twin-stemmed at base Poorly pruned on northern side Dead wood in crown to 50mm diameter
Recommended Works/ Reason for Works:	No works proposed														
T8	Holm Oak 1 Number	11	6 3 3 2	4	Young	240 SS	12	2.9	Normal	Fair	Medium	C	1,2	>40	Eccentric crown Crown poorly lifted
Recommended Works/ Reason for Works:	No works proposed														
T9	Holm Oak 1 Number	11	3 1 3 3	4	Young	220 SS	12	2.6	Normal	Fair	Low	C	1,2	>40	Drawn and suppressed with significant ivy on stem
Recommended Works/ Reason for Works:	No works proposed														
T10	Holm Oak 1 Number	11	2 2 4 4	3	Young	180 SS	12	2.2	Normal	Poor	Low	C	1,2	20-40	Drawn structure with mis-shapen stem
Recommended Works/ Reason for Works:	No works proposed														

Key:

1. Height - Estimated height of tree in metres
2. Crown Spread - Estimated crown spread in metres at the four cardinal points (N,E,S,W)
3. Ground Clearance refers to height of crown above existing ground levels
4. Age class of tree: Young, Middle-Aged, Mature, Over-Mature
5. Stem Diameter is measured in millimeters at 1.5m above ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem diameter may be estimated (est) where access is restricted or an average (avg) taken for groups of trees.
6. The protection Multiplier is 12 for single stemmed trees and 10 for multi-stemmed trees. It is used to calculate the root protection area radius
7. The Protection Radius is the radius of the root protection area of the tree
8. Vigour - Normal, Moderate, Poor, Dead
9. Structural Condition - Good, Fair, Poor
10. Landscape Contribution - High, Medium, Low
11. B.S. Category - British Standard 5837:2005: 'A' - High, 'B' - Moderate, 'C' - Low, 'R' - Remove
12. Sub Category - retention criteria values: 1 - Arboricultural, 2 - Landscape, 3 - Cultural including Conservational, Historic and Commemorative value
13. Useful Life - the tree's estimated remaining contribution to the landscape in years

APArboriculture
Tel: 07921 063 171

Tree Survey Schedule

Site: Seacourt (Land adjacent to 202 Seafront), Hayling Island, Hampshire PO11 9HR

Surveyed by: Andrew Pinchin

Date of Survey: 27th October 2010

Ref: APA/AP/2010/065

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Vigour	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Notes
T11	Holm Oak **1** Number	12	7 6 4 5	1	Middle Aged	630 MS	10	6.3	Normal	Fair	Medium	C	1,2	20-40	Twin-stemmed at base Dead wood in crown to 50mm diameter
Recommended Works/ Reason for Works:	Crown clean														
T12	Holm Oak **1** Number	9	2 2 2 2	2	Middle Aged	200 MS	10	2.0	Dead	Poor	Low	R		<10	Dead tree with drawn structure
Recommended Works/ Reason for Works:	Remove		Advisable for good arboricultural practice												
T13	Cherry **1** Number	6	3 3 3 3	1	Young	160 MS	10	1.6	Normal	Fair	Low	C	1	20-40	Twin-stemmed at height of 1.3m
Recommended Works/ Reason for Works:	No works proposed														
T14	Cherry **1** Number	8	4 4 3 4	2	Middle Aged	300est MS	10	3.0	Normal	Fair	Low	C	1	10-20	Off-site tree - close inspection of base not possible Twin-stemmed at base Location plotted using laser measuring device
Recommended Works/ Reason for Works:	No works proposed														

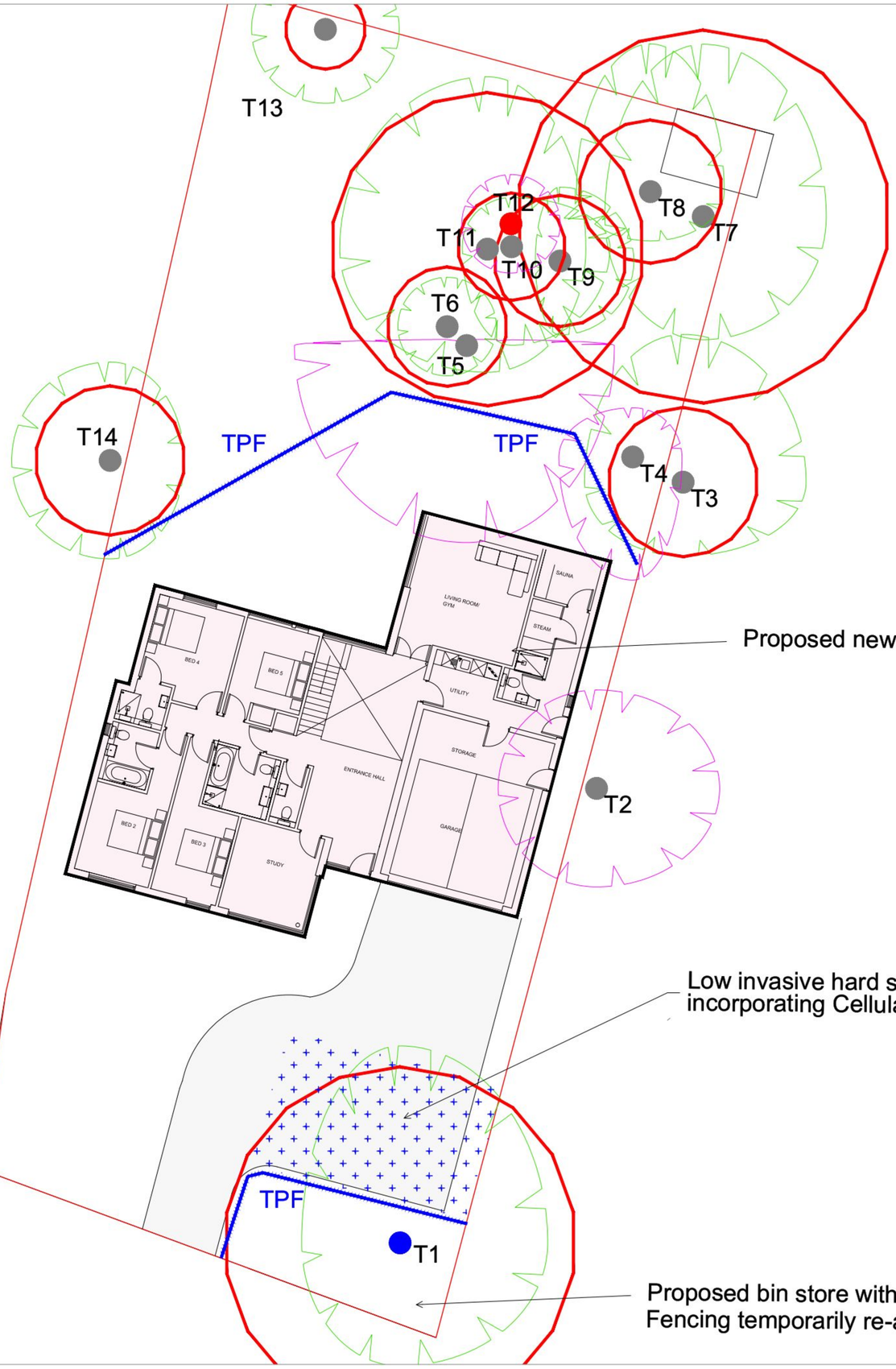
Total Trees 14

Key:

1. Height - Estimated height of tree in metres
2. Crown Spread - Estimated crown spread in metres at the four cardinal points (N,E,S,W)
3. Ground Clearance refers to height of crown above existing ground levels
4. Age class of tree: Young, Middle-Aged, Mature, Over-Mature
5. Stem Diameter is measured in millimeters at 1.5m above ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem diameter may be estimated (est) where access is restricted or an average (avg) taken for groups of trees.
6. The protection Multiplier is 12 for single stemmed trees and 10 for multi-stemmed trees. It is used to calculate the root protection area radius
7. The Protection Radius is the radius of the root protection area of the tree
8. Vigour - Normal, Moderate, Poor, Dead
9. Structural Condition - Good, Fair, Poor
10. Landscape Contribution - High, Medium, Low
11. B.S. Category - British Standard 5837:2005: 'A' - High, 'B' - Moderate, 'C' - Low, 'R' - Remove
12. Sub Category - retention criteria values: 1 - Arboricultural, 2 - Landscape, 3 - Cultural including Conservational, Historic and Commemorative value
13. Useful Life - the tree's estimated remaining contribution to the landscape in years

Appendix 2

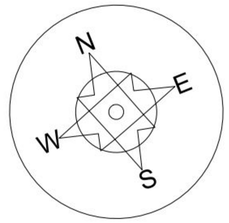
Tree Protection Plan



Proposed new dwelling

Low invasive hard surfacing within RPA of T1
incorporating Cellular Confinement System

Proposed bin store with low invasive foundation
Fencing temporarily re-aligned under supervision prior to construction



INDICATIVE

Root Protection Area (RPA)
of retained tree
(ref. BS5837: 2005)

Category A

Category B

Category C

Category R

Tree to be removed

TPF Tree protective fencing

Ground protection

Plan to be printed in colour and to scale

DRAWING TITLE

Tree Protection Plan

PROJECT

Seacourt
Hayling Island
PO11 9HR

SCALE	DATE	DRAWN BY
1:100 @ A1	23.06.2011	AP

DRAWING NUMBER	REV
TPP/APA/AP/2010/0065	

APArboriculture

32 Hill View
Dorking
Surrey
RH4 1SY

Tel: 07921 063 171

aparboriculture@googlemail.com

www.aparboriculture.co.uk

Appendix 3

BS5837:2005 Categorisation System

- *reproduced with the kind permission of Forbes-Laird Arboricultural Consultancy Ltd*

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL

Category and definition	Criteria	Identification on plan
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• 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 R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality. NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).	DARK RED RGB code: 127-000-000 AutoCAD 246

TREES TO BE CONSIDERED FOR RETENTION

Category and definition	Criteria – Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A **Those of high quality and value**: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN RGB code: 000-255-000 AutoCAD 90
Category B **Those trees of moderate quality and value**: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE RGB code: 000-000-255 AutoCAD 170
Category C **Those trees of low quality and value**: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY RGB code: 91-91-91 AutoCAD 251
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.			

EXTRACT FROM BS5837:2005 'TREES IN RELATION TO CONSTRUCTION – RECOMMENDATIONS' © BSI 2005
ADDITIONAL COLOUR INFORMATION PROVIDED BY THE AUTHOR

Appendix 4

Extracts from Section 11 of BS5837

Demolition and Construction in Proximity to Existing Trees

BS5837: 2005 Trees in Relation to Construction – Recommendations

Extracts from Section 11 - Demolition and construction in proximity to existing trees

11.1 General

11.1.1 Whilst the most reliable way to ensure tree retention is to preserve the RPA completely undisturbed, it may be necessary to undertake demolition operations and/or to incorporate hard surfaces and other construction within it. The ability of the tree(s) to tolerate some disturbance depends on individual circumstances including prevailing site conditions. Accordingly the advice of an arboriculturist should be sought for any operations within the root protection area. It should be noted that, in general, the older the tree, the less successfully it will adapt to new conditions. For this reason, the details of designs incorporating such trees should be considered with particular care.

11.1.2 Where it is intended to undertake demolition or construction operations within the root protection area, precautions should be taken to maintain the condition and health of the root system and in particular to:

a) prevent physical damage to the roots during demolition or construction (such as by soil compaction or severing);

b) make provision for water and oxygen to reach the roots;

c) allow for the future growth of the root system;

d) preserve the soil structure at a suitable bulk density for root growth and function (in particular for soils of a high fines content).

11.1.3 Throughout the process of demolition or construction, including piling (see 11.6.3), the soil structure within the root protection area should be protected.

11.2 Requirements for tree protection during demolition:

11.2.1 Where demolition is proposed on a site where trees are to be retained, access facilitation pruning should be undertaken to prevent injurious contact between demolition plant and the tree(s). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist.

11.2.2 Demolition of structures (including underground structures) within what would otherwise be a RPA should proceed according to the principles outlined in Clause 9. Barriers should be erected and fit for purpose ground protection installed to the edge of the existing structure.

11.2.3 All plant and vehicles engaged in demolition works should either operate outside the RPA, or should run on a temporary surface designed to protect the underlying soil structure. Where such ground protection is required, it should be installed prior to commencement of operations.

11.2.4 Where trees stand adjacent to structures scheduled for demolition, it may be necessary to undertake demolition inwards within the footprint of the existing building (often referred to as “top down, pull back”). Where levels of dust build-up on trees are likely, it may

be necessary to seek the advice of an arboriculturist on remedial measures, e.g. hose down the tree(s) immediately following any significant accumulation of dust.

11.2.5 Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that may be present beneath it. Hand held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface. Tree roots exposed by such operations should be treated in accordance with the details in 11.3.

11.2.6 The advice of an arboriculturist should be sought where underground structures present within the RPA are/will become redundant. In general it is preferable to seal these off as this avoids the need for significant excavation.

11.3 Principles for avoiding tree root damage during construction:

11.3.5 Any excavations which have to be undertaken within the root protection area should be carried out carefully by hand, avoiding damage to the protective bark covering larger roots. Roots, whilst exposed, should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Roots smaller than 25 mm diameter may be pruned back, preferably to a side branch, using a proprietary cutting tool such as bypass secateurs or handsaws. Roots larger than 25 mm should only be severed following consultation with an arboriculturist, as they may be essential to the tree's health and stability. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builders' sand should not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

11.6 Foundations within the RPA

11.6.1 The insertion of structures within root protection areas may be justified if this allows the retention of a good quality tree (category A or B, see Table 1). However, it is essential that careful consideration is given to foundation design (see 11.6.2). In such cases, the use of traditional strip footings, in particular those constructed tangentially across the root zone, can result in severe damage to tree roots and should be avoided.

11.6.2 Root damage can be minimized by using a combination of the following:

- piles or radial strip footings both of which should be located to avoid major tree roots;

- beams, slabs, suspended floors, where all should be laid at or above ground level, and cantilevered as necessary to avoid tree roots. In order to arrive at a suitable solution, site specific and specialist advice regarding foundation design should be sought from an arboriculturist and an engineer.

11.6.3 Where piling is to be installed near to trees, the smallest practical pile diameter should be used as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. The latter is particularly important where piling within the branch spread is proposed, as mini-rigs reduce the need for access facilitation pruning. Sheathed piles protect the soil and adjacent roots from the potential toxic effects of concrete.

11.8 Low invasive vehicular access in proximity to trees

11.8.1 Where the construction of hard surface access cannot be avoided within the root protection area, a no-dig design should be used to avoid root loss due to excavation. In addition the structure of the hard surface should be designed to avoid localised compaction, by evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access. Such designs might include the use of a three dimensional cellular confinement system as an integral component of the sub-base, to act as a load suspension layer. Driveways and roadways constructed according to this principle can be designed to be suitable for most types of traffic. Where this type of access is proposed, site-specific and specialist advice should be sought from an engineer and an arboriculturist in order to ensure that it is fit for purpose.

11.8.2 Where the new access would cover in excess of 20 % of the RPA or be wider than 3 m within it, it should be constructed so as to allow moisture infiltration and gaseous diffusion.