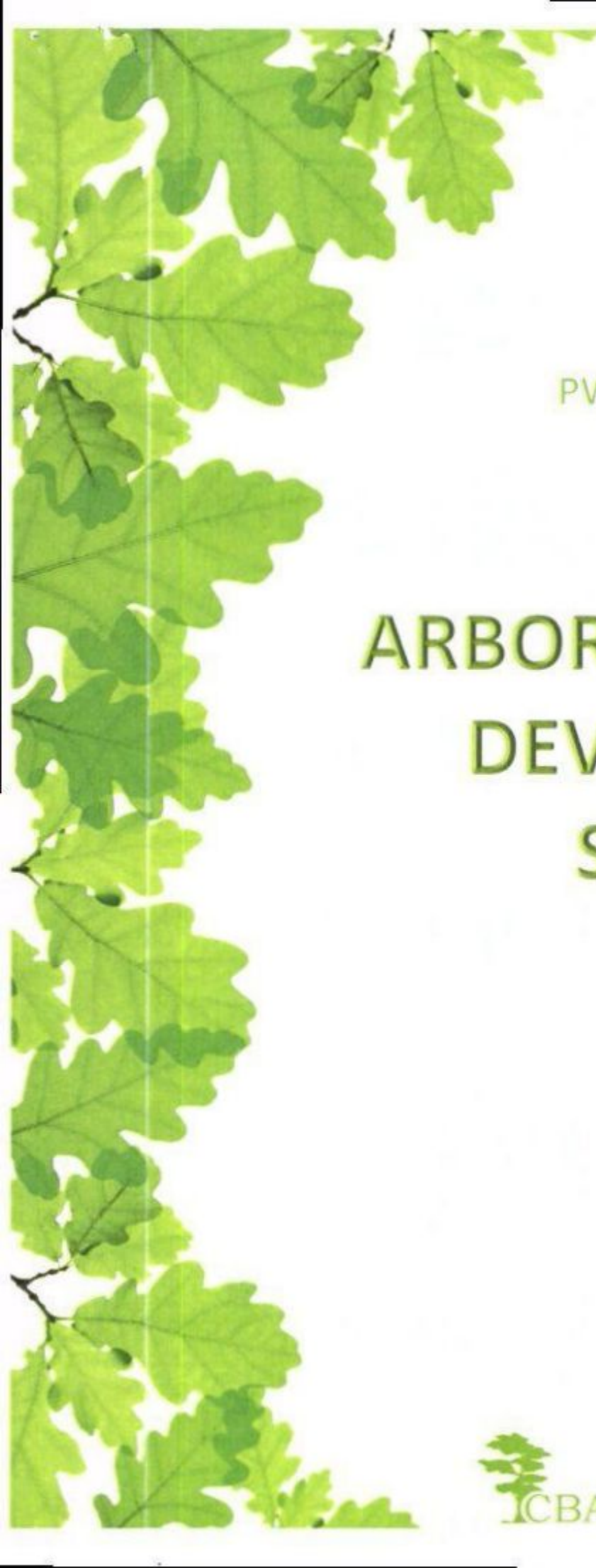
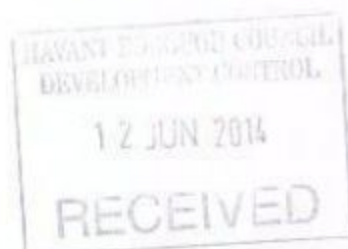




June 2014
CBA6436 v1



PWP Architects on behalf of
LRH Homes

ARBORICULTURAL DEVELOPMENT STATEMENT

Site:
Belmont Castle,
Portsdown Hill Road,
Havant,
PO9 3JY



Russell House, Unit 20, Chalcroft Business Park,
Burnetts Lane, West End, Southampton, SO30 2PA
Tel: 023 8098 6229 www: info@cbatrees.co.uk
The Complete Arboricultural Consultancy



ARBORICULTURAL DEVELOPMENT STATEMENT

Arboricultural Implications Assessment and Method Statement

guided by recommendations within BS5837:2012

Client:	PWP Architects on behalf of LRH Homes
Site:	Belmont Castle, Portsdown Hill Road, PO9 3JY
Arboricultural Consultant:	Alex Monk <i>TechCert (Arbor.A), NCH.Arb</i>
Date:	June 2014

SUMMARY

The proposal is for the construction of a new residential block and associated car parking facilities at the site of Belmont Castle, Portsdown Hill Road.

This Arboricultural Development Statement (ADS) will demonstrate the protection measures for the trees and should be read in association with the Tree Protection Plan CBA6436.04B which identifies tree retention measures. It follows the initial tree survey, implications assessment and on-going discussions to minimise the impact upon the existing tree stock.

The emphasis of the report is predominantly that of preservation and tree protection. It identifies methodologies to provide protection for trees, to ensure their healthy and safe retention during and post development, as guided by BS5837:2012 and current best practice.

A total of 12 (twelve) individual trees and 2 (two) groups of trees can be retained within the development as detailed within this report.

There are 8 (eight) individual trees that will be lost to facilitate the development, and allow reasonable and usable developable space.

Tree 9 had been previously removed.

CBA Trees believes that the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

PART 1 ARBORICULTURAL IMPLICATIONS ASSESSMENT

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SUPPORTING INFORMATION/APPENDICES:

CB1	Tree Survey Schedule and Tree Survey Plan CBA6436.03A
CB2	Root Protection Area Schedule
CB3	Tree Protection Plan CBA6436.04B
CB4	Tree Works Schedule

GUIDING PRINCIPLES/APPENDICES:

CB5	Tree Protection Guidance Leaflet Construction Exclusion Zone Site Notice Common Causes of Damage During Construction Works
CB6	Flow Diagram Summarising the Planning Process for Trees on Development Sites
CB7	Qualifications and Experience

PART 1

ARBORICULTURAL IMPLICATIONS ASSESSMENT

3.0 DESCRIPTION OF THE SITE

- 3.1 The site is a residential care home with the main building dominating the site. It is accessed from Portsdown Hill Road with parking and hard standing areas to front of the site.

3.2 **Photograph 1:** View of site entrance



- 3.3 The rear of the site is laid out to amenity space with soft landscaping and areas of denser tree cover. The majority of the tree stock to the front of the site is located to the periphery.

4.0 THE TREE STOCK

- 4.1 A tree survey was undertaken by CBA Trees on 22nd May 2014. The tree survey exercise identified 21 (twenty one) individual trees and 2 (two) groups of trees; Tree 9 had been previously removed; a Tree Survey Schedule and Plan (CBA6436.03A) are appended at CB1.

4.2 **Tree Categorisation Method**

Category B = Trees of moderate quality and value, capable of making a significant contribution for in excess of 20 years. There were 9 (nine) individual 'B' grade trees on or adjacent to the site at the time of surveying. Trees 4, 5, 6, 10, 11, 12, 14, 18 and 19.

Category C = Trees of low quality and value which might remain for a minimum of 10 years or young trees with stems of less than 150mm diameter. There were 12 (twelve) individual 'C' grade trees in total on or adjacent to the site at the time of surveying. Trees 1, 2, 3, 7, 8, 13, 15, 16, 17, 20, 21 and 22.

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ARBORICULTURAL IMPLICATIONS ASSESSMENT

1.0 INTRODUCTION

- 1.1 There is a development proposal for the construction of a new residential block and associated car parking at the site of Belmont Castle, Portsdown Hill Road.
- 1.2 Document disclosure provided:
 - Structural information provided by PWP Architects
- 1.3 The client provided the original site plans and locations of the trees, and these have been the basis for the production of subsequent plans. Whilst CBA Trees has had a limited input in defining the contents of the development plan, it broadly conforms to the requirements of BS5837:2012 "*Trees in Relation to Design, Demolition and Construction – Recommendations*" and current best practice advice.
- 1.4 Our advice has been sought on the principles of the development in relation to the potential impact on the existing tree stock, to inform and to facilitate the development layout that is acceptable in arboricultural terms.

2.0 CLIENT'S BRIEF

- 2.1 In line with our written quotation and verbal instructions, information has been compiled in accordance with BS5837:2012 and current best practice advice.
 - To undertake a Tree Survey, appended at CB1.
 - To produce an AutoCAD Tree Survey Plan that relies on the accuracy of the topographical survey provided by the client. (Plan CBA6436.03A appended with the Tree Survey Schedule at CB1).
 - To produce a schedule of Root Protection Areas in accordance with BS5837:2012 Annex D, appended at CB2.
 - To provide tree constraints advice.
 - To undertake an Arboricultural Implications Assessment (AIA) of the development provided by the client to identify which trees will be lost, which can be retained and suggest mitigating build techniques in order to retain trees.
 - Based on the above and further on-going discussions, to provide an Arboricultural Development Statement detailing the methodologies for the retention of the tree stock where feasible, in relation to the approved development layout including a Tree Protection Plan (Plan CBA6436.04B) appended at CB3.

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ARBORICULTURAL IMPLICATIONS ASSESSMENT

Note:

Trees under these categories are trees that should be a material consideration in the development process; the subcategories are intended to reflect arboricultural, landscape and cultural values respectively.

- 4.3 The groups consist of Sycamore, Yew and Norway Maple. They have been categorised as either moderate 'B' grade relating to Group 2 or low 'C' grade relating to Group 1.
- 4.4 For more details of the existing tree stock, refer to the Tree Survey Schedule (appended at CB1).

5.0 TREE PRESERVATION ORDER/CONSERVATION AREA

- 5.1 Following consultation with Havant Borough Council, CBA Trees has been made aware that trees 11 (Beech) and 19 (Yew), are protected by Tree Preservation Order No 1873 dated Jan 2007. If it is intended to carry out works to trees on site prior to the granting of Full Planning Consent and Discharge of Planning Conditions or, in excess of those shown within this development statement, it will be necessary to obtain written consent from Havant Borough Council. No work should take place on off-site trees without the consent of the tree owner.

6.0 PROPOSED TREE RETENTION AND TREE LOSS

- 6.1 In accordance with the recommendations contained within BS5837:2012, an experienced arboriculturist has assessed the requirements for tree protection and the Root Protection Area (RPA) (appended at CB2). The implications of the proposed development are detailed below, along with any mitigating measures to ensure the retention of these trees.
- 6.2 As part of the assessment, dimensions have been scaled from the proposed development drawing 4055 – 1300B Site Plan prepared and modified, to include the relevant Tree Survey data and the information as shown on plan CBA6436.04B, appended at CB3.

7.0 SUMMARY OF ARBORICULTURAL IMPLICATIONS

- 7.1 The following summary of implications relates to only those trees which will require mitigation measures to allow for construction operations. Trees, groups and woodlands not listed below can be fully protected in accordance with BS5837:2012 as indicated on Plan CBA6436.04B

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ARBORICULTURAL IMPLICATIONS ASSESSMENT

<i>Tree No.</i>	<i>Species</i>	<i>BS 5837:2012 Cat</i>	<i>Potential cause of harm</i>	<i>Implication</i>	<i>Mitigation</i>
1	Flowering Cherry	C1	• Under footprint of building	• Lost	• Replacement planting
2	Weeping Birch	C1	• Landscaping	• Lost	• Replacement planting
3	Flowering Cherry	C1	• Under footpath route	• Lost	• Replacement planting
4	Common Yew	B1+2	• Under footpath route	• Lost	• Replacement planting
5	Common Yew	B1+2	• Under footprint of building	• Lost	• Replacement planting
6	Common Yew	B1+2	• Under footprint of building	• Lost	• Replacement planting
7	Common Yew	C1+2	• Under footprint of building	• Lost	• Replacement planting
8	Plum	C1+2	• Under footprint of building	• Lost	• Replacement planting
11	Common Beech	B1	• Low branches over access road	• Potential for crown damage	• Crown raise on North and East sides over road to give a clearance of 4m above ground level
12	Norway Maple	B1	• Parking area encroaches into RPA	• Potential for root loss and damage	• Car park as shown on plan ref CBA6436.04B will be constructed using NO DIG design within RPA and based on existing ground levels with a porous surface finish
13	Common Sycamore	C1	• Parking area encroaches into RPA	• Potential for root loss and damage	• Car park as shown on plan ref CBA6436.04B will be constructed using NO DIG design within RPA and based on existing ground levels with a porous surface finish

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<i>Tree No.</i>	<i>Species</i>	<i>BS 5837:2012 Cat</i>	<i>Potential cause of harm</i>	<i>Implication</i>	<i>Mitigation</i>
15	Common Holly	C1	• Low branches over access road	• Potential for crown damage	• Crown raise on East side over road to give a clearance of 4m above ground level
16	Bay Laurel	C1	• Low branches over access road	• Potential for crown damage	• Crown raise on West side over road to give a clearance of 4m above ground level
21	Purple Leaf Norway Maple	C1+2	• Under footprint of parking area	• Lost	• Lift and re-plant on a suitable part of the site
22	Purple Leaf Plum	C1+2	• Lack of working space due to canopy	• Potential for canopy damage	• Prune back canopy on South side by 1.5m. Also prune back canopy on West side by 1.5m to balance crown shape

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ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

8.0 PRE-COMMENCEMENT SITE MEETING

- 8.1 A pre-commencement site meeting shall be held prior to any works commencing on site, to agree all approved processes with the arboricultural consultant, the construction personnel and Havant Borough Council. This meeting could be used to formally agree the methods of work, position of site offices, material storage, compounds, parking and tree protection measures prior to commencement of the development and the associated clearance work.

9.0 ADDITIONAL ARBORICULTURAL ADVICE FOR SITE PERSONNEL

- 9.1 To provide site personnel with additional information regarding the requirements of Tree Protection, a leaflet, appended at CB5 shall be issued to all staff at the time of their site induction. Spare copies of this leaflet shall be available in the site office as replacements.
- 9.2 In order to inform site personnel of the purpose of the fencing, information notices shall be fixed to the fencing at 5m intervals. These notices shall be of all-weather construction and shall be substantially in the form of the specimen provided at appendix CB5 and replaced as and when necessary.

10.0 PRE-DEVELOPMENT TREE WORKS

- 10.1 All tree works will be undertaken prior to the commencement of site preparation and construction works.
- 10.2 **All permitted or approved tree work** should be carried out in accordance with the British Standard "Recommendations for Tree Work" BS3998:2010, by suitably qualified and experienced professional arborists. Under no circumstances shall site personnel undertake any tree pruning operations. All tree surgery works should be carried out prior to the development of the site, and erection of protective fencing.
- 10.3 With regard to the trees to be retained, if protected by a Tree Preservation Order or within a Conservation Area, prior approval from Havant Borough Council will be required, if any works to these trees are proposed prior to full planning permission being granted detailing the approved tree works.
- 10.4 Consideration should be given to the timing of the proposed tree works to avoid the active growing period of trees. Therefore, all tree work should ideally be carried out during the dormant period from November through to February and then again from June to August.
- 10.5 Due to the official bird nesting season considered to be from 1st March through to the 31st July (Natural England) depending on weather conditions, consideration must also be given to the potential for nesting birds. Therefore if tree work is to be carried out within June, July or August the project ecologist must be consulted to:

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- Complete or advise on a pre-works survey which needs to be carried out by a suitably competent person. As a general rule, it should be assumed that birds will be nesting in trees, and it is down to contractors to assess, record and confirm that any works carried out in the management of trees and other vegetation has not disturbed actively nesting birds*.
- Ground vegetation, and therefore ground nesting birds, can often be overlooked by tree workers so additional care and controls should be taken when access and egress to the work site may also cause disturbance or damage to a nesting site. This is also true for retained trees on site as the removal of adjacent trees or remedial works on a tree may lead to an established nest being abandoned, exposed to the elements or predation. This action is also a breach of the Act and therefore could lead to prosecution due to the infringement of the Wildlife and Countryside Act 1981 and breaching the European Habitats Directive 1992/Nesting Birds Directive*.

* Advice taken from the Arboricultural Associations website on 16th May 2013.

- 10.6 Although not apparent at the time of the site visit if appropriate, consideration should also be given to the presence of bats, and a full visual assessment should be undertaken before any works are carried out on the trees. Where bats are identified as a serious concern, a bat survey should be undertaken by qualified and trained personnel to identify the needs of the bats (roosts, resting place etc) and no tree works can be carried out until the 'all clear' is given, or a programme of recommendations is received in writing.
- 10.7 Should additional tree works become apparent during the construction process; written consent will be required from Havant Borough Council prior to these additional works being undertaken.
- 10.8 All tree works that are required to facilitate the development are detailed within the Tree Works Schedule appended at CB4.

11.0 TREE PROTECTION MEASURES

11.1 Reasons for Tree Protection

The correct and timely installation and maintenance of tree protection measures is the most important action necessary to ensure retained trees, groups on and adjacent to the site, remain unaffected by development operations. Exclusion of construction activity from the outset of site preparation will ensure those trees identified for retention are maintained in a safe and healthy condition.

Although aerial parts of the tree, trunk, branches and twigs are obvious, extensive and irreparable damage can be caused to the roots and rooting environment without any immediately noticeable effect. Severance of large roots in close proximity to the stem can result in the immediate loss of stability and/or rapid death whilst damage to more distal parts of the root system or rooting environment will

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result in a slow decline in tree health over a period of several years, resulting in premature loss.

11.2 Damage to Trunks Stems and Branches

Impact damage to the crown of the tree can result in the loss of leaves which produce starch and sugars (carbohydrates) and a reduction in the visual amenity which established trees provide. These carbohydrates are necessary for maintaining all biological functions within the tree, including growth, reproduction and defence. Extensive crown damage will reduce the tree's ability to produce carbohydrates and increase physiological stress on the tree.

The bark protects the underlying vascular tissue and cells responsible for growth from drying, disease and decay. Bark is loosely attached to the underlying tissue and can be easily damaged or removed through direct contact. It is particularly susceptible to damage when trees are young or in early spring following the onset of growth.

Impact damage which removes bark, results in dysfunction of the underlying vascular tissue preventing transport of water, mineral nutrients and carbohydrates to parts of the tree to which they are connected. If damage to the bark extends around the whole circumference, the root, branch or trunk the section beyond the damage will be killed.

Branches which are either broken or are torn from the trunk of the tree, create wounds which are prone to colonization by wood destroying organisms. These organisms cause internal decay, which result in future tree failure and premature loss.

11.3 Purpose of Tree Protection

All site operations will be planned, implemented and supervised so as to prevent the following:

- Root severance
- Damage to the bark, branches and trunks
- Compaction of the soil within the Construction Exclusion Zone
- Alterations in soil level
- Soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives

11.4 Tree Protection

Before starting construction works tree protection will be installed in accordance with Tree Protection Plan CBA6346.04B (appended at CB3). This will occur immediately following the completion of tree works and prior to any site preparation works starting.

Once site preparation has been complete and ground remediation works have been completed, tree protection for the construction phase will be implemented in accordance with Plan CBA6436.04B.

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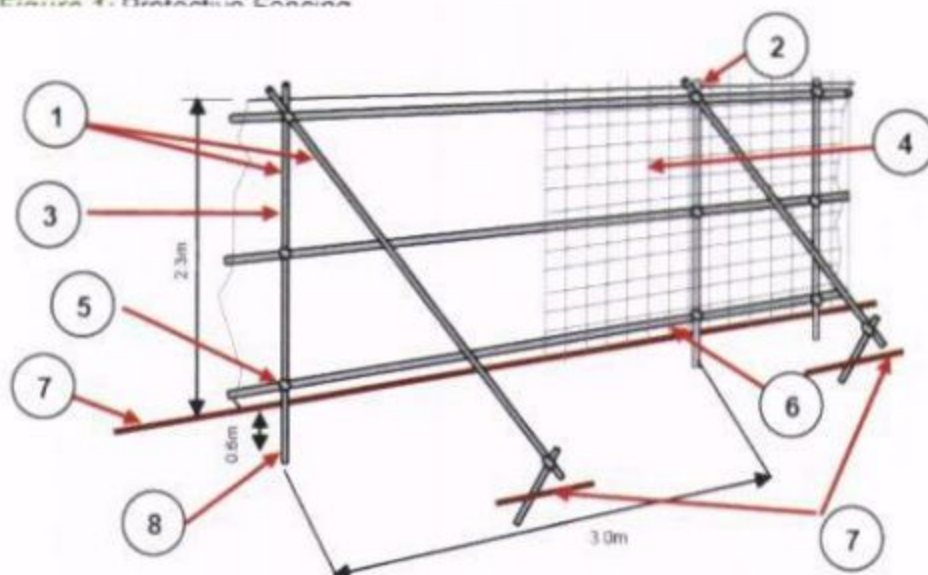
A copy of the Tree Protection Plan will be displayed in the site office and canteen as a point of reference for all site operatives.

11.5 Standard Protective Fencing

The barrier is to comprise of a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps.

In accordance with Section 6.2.2.4 of BS5837:2012, weldmesh panels on rubber or concrete feet are not resistant to impact, and will not be used for tree protection purposes.

Figure 4: Protective Fencing



1. Standard scaffold poles
2. Uprights to be driven into the ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4. Weldmesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on inside face of fencing to avoid easy dismantling
7. Ground level
8. Approximately 0.6m driven into the ground

Example of protective fencing:



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Once the fencing is in place it must remain *in-situ* throughout the following list:

- Contractor occupancy
- Plant and Materials delivery
- Construction works
- Installation of porous surfacing
- Utility installation
- Completion of development
- Landscaping

The area within the CEZ will be regarded as **sacrosanct**, and the tree protective fencing shall not be taken down or relocated at any time without the written approval of Havant Borough Council. An example of a CEZ notice is appended at CB5.

12.0 AVOIDING DAMAGE TO STEMS AND BRANCHES

- 12.1 Care shall be taken when planning site operations, to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact could result in serious damage to them, and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees, will be conducted under the supervision of a banksman, in order to ensure adequate clearance from trees is maintained at all times.

13.0 VEHICULAR MOVEMENTS

- 13.1 There should be minimal vehicular movement in the potential rooting zone outside the CEZ identified on Plan CBA6436.04B.
- 13.2 It is not anticipated that there will be a need for excess vehicular movement near the retained trees, given that there is established access / areas of existing hard surface within the site which are suitable for the purpose.

14.0 SITING OF TEMPORARY OFFICES, TOILETS AND MATERIAL STORAGE COMPOUNDS

- 14.1 It is anticipated that all storage materials and deliveries shall make use of the existing access and hard surfaces within the site confines, in order to avoid unnecessary damage to tree roots.
- 14.2 The locations shall be agreed in writing with Havant Borough Council prior to the commencement of works on site, and will remain in only those agreed locations throughout the construction phases. If an alternative location is required, this must be agreed in writing with Havant Borough Council. This will also include the delivery; storage and movement of all essential facilities, as well as aspects such as

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temporary contractor vehicle parking and site location of chemical mixing (e.g. concrete). All such locations will be outside of the RPAs, and avoid areas where 'run off' of chemicals may flow into RPAs.

14.3 Site Huts

All site huts (if required) that are to be situated on ground that is not existing hard surfacing, shall have appropriate footings or be situated on a temporary surface, which will aid in reducing the potential for compaction of the ground, where they are in close proximity to the existing tree protective fencing line. Site huts can be used as part of the protective fencing boundary, and in some cases, can be beneficial where installation does not conflict with the aerial parts of the tree.

If it is proposed that site huts, ground protection or stores are to be located within the RPA of retained trees for more than 3 months, a temporary irrigation and aeration system will be installed to ensure that the rooting environment is maintained in a good condition. The system will include a compressible layer of composted wood chip or forest bark over a geotextile separation layer, on which ground protection or site huts can be placed. Watering will depend on permeability of the soil, weather conditions and the extent of the area covered, but should include weekly watering from April to September, when no rainfall has occurred for more than four consecutive days.

14.4 Material Storage

This shall be accommodated outside of the CEZ, particularly to avoid harmful spillages of fuel, or phytotoxic substances that may damage the health of retained trees.

15.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

15.1 Inside the CEZ formed by the protective fencing and ground protection measures, the following prohibitions shall apply:

- No construction activity will occur within the CEZ unless otherwise stated in this report, or agreed in writing with Havant Borough Council prior to the specific activity taking place.

15.2 In addition to the above, further precautions are necessary adjacent to trees outside the CEZ:

- Materials, which will contaminate the soil e.g. concrete mixing, diesel oil and vehicle washings, shall not be discharged within 10 metres of the tree stem. This should take into consideration the topography of the site and slopes, to avoid materials such as concrete washings running towards trees.
- Fires shall not be lit in a position where their flames can extend to within 5 metres of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

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- Notice boards, telephone cables or other services shall not be attached to any part of the tree. (See appendix CB5 Common Causes of Damage During Construction Works)

16.0 UTILITY SERVICE CONNECTIONS

- 16.1 Details of service location proposals have not been forwarded to CBA Trees at the time of compiling this assessment. It is however assumed, given the location of the trees, that services will be installed outside the root protection areas of retained trees, and connected to the existing where practicable, this will avoid disturbance of tree roots and ensure their healthy retention.

17.0 INSTALLATION OF HARD SURFACING IN CLOSE PROXIMITY TO RETAINED TREES

- 17.1 Plan CBA6436.04B indicates where no-dig hard surfaces are to be installed within the RPA of retained trees. These surfaces must comply with the following requirements:
- The proposed hard surface will consider site-specific factors and will be designed in accordance with advice from a structural engineer drainage engineer and arboricultural consultant. This will result in a design which is fit for purpose, adequate for the task and sympathetic to the biological requirements of the trees.
 - If ground levels are to be raised, this should be achieved with a granular material which does not inhibit gaseous exchange (such as no-fines gravel, washed aggregate or cobbles).
 - Sub-base will consist of a non-binding, no fines granular material which does not inhibit water percolation or gaseous exchange.
 - If a substantial area of fill is to be installed, provision will be made for the installation of irrigation and aeration system within the RPA of retained trees. Distance between pipes will not exceed 400mm, irrigation pipes will be connected to the surface water drainage system. Aeration pipes will be installed in between and will be protected by paving mounted grills.
 - Depending on the load-bearing capacity of the soil determined through engineering testing, and the expected loads to be exerted on the soil, it may be necessary to incorporate a load suspension layer such as a 3 dimensional cellular confinement system. This layer must allow gaseous exchange both vertically and horizontally. Any load suspension system should only be used in accordance with the manufacturer's guidelines, and its installation should comply with any relevant health and safety guidance. CBA Trees can provide further information relating to appropriate systems on request.

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- If the proposed area of no-dig hard surfacing is greater than 3 metres wide on one side of the tree, or it covers more than 20% of the RPA, it will be finished with a surface treatment which is permeable to gaseous and water movements.
- If water logging is likely to be a concern on a site, any proposed no-dig hard surfacing should be designed to direct water away from the base of the tree or provision made for the inclusion of surface water drainage.
- Any proposed no-dig hard surfacing will be designed to allow future growth of the roots and the base of the trunk, and as such should be no closer than 500mm from the trunk base. This will avoid future damage, both to the tree and engineered surface.

17.2 Wearing courses which could be installed over the granular material include:

- Washed Gravel – This is particularly useful as it retains its porosity (unless excessively consolidated), and can accommodate irregular shapes and changes in level. It is rarely suitable where vehicle or heavy pedestrian access is expected. Any gravel should have a low fines content to avoid low permeability resulting from consolidation.
- Paving Slabs and Pavers – These can be installed with infiltration spaces between the slabs, and should be installed dry-jointed and on a sharp sand foundation.
- In-situ Concrete – This is an impermeable surface, so would require holes of at least 50mm diameter at 300-600mm spacings, (under advice from a structural engineer), which when filled with a no-fines gravel would allow for the movement of both water and gases to the rooting zone.
- Bitumen Paving – If implemented, this must be of a porous construction however, such surfaces will eventually become clogged with silt, and provision must be made for regular vacuum sweeping within the future maintenance of the surface or be installed in a similar way to the in-situ concrete, or be limited to less than 20% of the RPA.
- Other surfaces may be used but the final design of any no-dig hard surface should always be in agreement with a structural engineer and the retained arboriculturist.

If edge supports are required, they will be designed so as not to require any excavation of the existing soil surface, and should be in the form of either wooden or other edging materials, approved by a structural engineer and the retained arboriculturist. These edgings should be pinned in place, and the location of the pins should seek to avoid exposed surface or structural roots exceeding 25mm diameter.

Construction of the surface will be considered at the design stage. All work will need to be completed, either from existing hard surface, or as a rolling construction working from the finished hard surface to avoid the need for additional ground

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protection. This will prevent damage to the roots and rooting environment of retained trees.

18.0 SOFT LANDSCAPING WORKS

- 18.1 Any soft landscaping works within the development area will be in accordance with the approved landscape plan, and any specification of such works approved by the local planning authority.
- 18.2 CBA Trees has not been provided with the final landscaping proposals, however all landscaping will accord with following requirements:
- The construction exclusion zone will remain off limits for all site plant and machinery unless fit for purpose ground protection is installed. Pedestrian traffic must be kept to an absolute minimum only permitted for the ground preparation and landscape installation works
 - The landscaping works will need to be undertaken in such a way as to avoid level changes, deep digging or mechanical rotovating. Excavation of planting pits with the RPA can cause serious harm the root system of retained trees. Planting pits within the RPA of retained trees will be excavated by hand to avoid roots greater than 25mm and masses of smaller roots.



Figure 2:

Root severance as a result of planting within RPA

Planting Trees and Shrubs. Watson G. W. and Himelick E. B. 1997

- If any planting pits are required within the CEZ of retained trees, these will be dug by hand and with care avoiding roots greater than 25mm diameter or masses of smaller roots.
- 18.3 Installation of turf within the CEZ will require that:
- In all cases, existing vegetation will be removed to ground level by hand following treatment with a suitable systemic herbicide which is not toxic to existing retained trees. This prevents the build-up of methane formed as part of the composition process.

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- Stumps will be ground out to 300mm below ground level and resulting holes filled with sharp horticultural sand to provide a stable base for laying of the new turf
- 18.4 Any surface mulch will consists of well-composted material such as bark or wood chips. This is necessary to avoid potential nutrient loss from the soil, such as Nitrogen, as the mulch breaks down, as nutrient loss can be detrimental to the health and longevity of retained trees.
- 18.5 All work specified in the approved landscaping scheme shall be carried out before the end of the first planting and seeding season, following the occupation of any completed part of the development.
- 18.6 Any existing tree shown to be retained, or trees and shrubs to be planted as part of the landscaping scheme that are removed, die, become severely damaged beyond recovery or diseased within 2-5 years of the completion of the development (dependent on planning conditions), shall be replaced with trees or shrubs of appropriate size and species that complement the existing tree stock, within the next planting season. Where the trees in question are protected by planning controls, the local planning authority should be informed and necessary arrangements made prior to such work.

19.0 SITE MONITORING AND SUPERVISION

- 19.1 It is recommended that on-going arboricultural site monitoring takes place for the duration of the proposed development, to be carried out by a qualified and experienced arboriculturist at pre-determined and agreed time intervals, and governed by the type, timing, location and intensity of site works. Havant Borough Council to Condition site monitoring if required.
- 19.2 If Conditioned, it will take the form of regular inspections (to be agreed, but at least one visit per month during the construction phase of the development is advised, together with additional visits to supervise works with the CEZ of retained tree/s), the aim of the visits is to maintain on-going liaison with all personnel involved in the site development, Havant Borough Council and its Tree Officer.
- 19.3 Any defects requiring rectification shall be notified to the Contractor/Site Manager and the client.
- 19.4 In addition, a site logbook for tree protection measures is kept to record all stages of the development from the erection of the protective fencing, right through to the completion of the project. This will be made available to the arboricultural consultant and Havant Borough Council if required, to show evidence of continuous site monitoring.

PART 2

ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

Example pro-forma

Date	Activity	Checked	Comments/ damage noted	By whom	Signed	Action taken
	Erection of protective fencing					
	Inspection of protective fencing					

- 19.5 The Havant Borough Council Tree Officer (or appropriate representative) will have agreed access to the site, and will report on any problem areas directly to the developer's retained arboriculturist, who will then visit the site and make recommendations to the developer on how best to rectify the situation and ensure the implementation.

20.0 REPORT DAMAGE TO TREES AND TREE PROTECTION FENCING

- 20.1 Should any damage be caused to trees noted for retention, either by the above works or as the result of any other action, the damage should be reported to the site supervisor immediately. The site supervisor shall report up the chain of responsibility to the retained consultant arboriculturist, or in the absence of such an appointment, to an appropriately qualified arboriculturist, to enable remedial measures to be implemented as necessary and as agreed with Havant Borough Council.
- 20.2 Should protective fencing become damaged so as to impair its function in protecting trees, all work shall cease in the vicinity of the damage, until the fence has been returned to standard.

21.0 PHASING OF DEVELOPMENT

- 21.1 The process of the development should follow that of Figure 1 of BS5837:2012 (appended at CB6), in addition to any additional site-specific considerations and factors that need to occur, or be implemented in any one phase.
- 21.2 Existing trees on and adjacent to the site have been broadly assessed in accordance with BS5837:2012. At the survey and design stages, consideration has been given to the possible implications of development on existing trees, and how these effects can be minimised.
- 21.3 Compliance with this Method Statement will ensure that all retained trees on and adjacent to the site are maintained in a healthy and safe condition, both during and post construction.

PART 2

ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

- 21.4 There are several phases of development on this site, each phase will follow the above process to ensure that detrimental effects to retained trees and landscape areas are minimised.

22.0 CONSTRUCTION WORK TIMINGS

- 22.1 This is for determination by Havant Borough Council.

23.0 REMOVAL OF PROTECTIVE FENCING

- 23.1 When the development phase is complete, all drainage and service runs are in place, all site machinery has been removed and any landscaping for the principal area of the site has been implemented, the protective fencing will be dismantled.
- 23.2 This fence dismantling must be undertaken with great care, and will need to be supervised to avoid heavy machinery being used within the root protection areas. Hoarding, scaffolding and other fencing materials will need to be removed from site immediately.

24.0 COMPLETION MEETING

- 24.1 Upon completion of all the works specified above, and in line with procedures also specified, the retained arboricultural consultant will invite Havant Borough Council Tree Officer to meet on site, to discuss the project and to agree on any remedial works required.

25.0 FUTURE MANAGEMENT AND POST DEVELOPMENT TREE MANAGEMENT

- 25.1 The site owner will be under an obligation to maintain and manage the tree stock on site, and should seek to address this obligation through having regular tree inspections by a suitably qualified arboricultural consultant.
- 25.2 At Section 8.8 of BS5837:2012, emphasis is placed on the aftercare of trees following completion of development works. Whilst we support these recommendations, this is a matter for our clients to consider and for Havant Borough Council to determine whether they wish to apply a Condition relating to this aspect of work.

PART 2

ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

Post development management of BS5837:2012

8.8.3 Post-development management: existing trees

A programme of inspections to advise on any necessary work to retained trees should be drawn up in conjunction with an arboriculturist. This programme might include recommendations for frequency of inspection and/or proposals for tree work [see Note to 5.3.4c)], and should take the form of a management plan. A copy of this plan should be supplied to all parties with an interest in future site management.

NOTE 1 Trees growing on a site before development takes place can, if adversely affected, be in decline over a period of several years before they die.

NOTE 2 Where the trees in question are subject to legal, planning or other regulatory controls, the appropriate authority needs to be informed and any necessary agreements obtained prior to work being undertaken.

8.8.4 Post-development management: new plantings

8.8.4.1 Regular maintenance of newly planted trees is of particular importance for at least three years during the critical post-planting period and might, where required by site conditions, planning requirements or legal agreement, be for 5 years or more. A detailed maintenance schedule covering this period should be prepared in conjunction with the landscape design proposals, and appropriate arrangements made for its implementation.

NOTE Maintenance operations would normally include weed control and watering as necessary, inspection and adjustment of support systems and monitoring of growth. Formative pruning might also be required to achieve desired effects or to provide for access or clearance.

8.8.4.2 Defects that become apparent during the maintenance period should be addressed by appropriate remedial works (including replacement planting where necessary) as advised by a competent person.

26.0 CONCLUSIONS

- 26.1 The development proposals for the construction of a new residential block and associated parking facilities have been assessed broadly in accordance with BS5837:2012 "Trees in Relation to Design, Demolition and Construction – Recommendations".
- 26.2 It is our opinion that the trees identified for retention can be afforded due respect and provided adequate protection, ensuring their safe and healthy retention during the development process.
- 26.3 It is our opinion that the loss of the individual trees will not have a detrimental effect on the local visual amenity or significantly alter the visual treed character of the local area, if a landscaping scheme that includes quality trees, selected to suit the site conditions and the space available, is implemented.
- 26.4 Provided the recommendations included within this report are strictly adhered to, CBA Trees believes the trees highlighted for retention within this report can be retained without undue stress on their long-term health.

PART 2

ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

27.0 CONTACT LIST

27.1 It is suggested that points of contact and lines of communication are established prior to commencement of the works on site including:-

- Arboricultural Consultant
- Project Architect
- Highways Engineer
- Structural Engineer
- Drainage Engineer
- Landscape Architects
- Havant Borough Council's Tree Officer
- Havant Borough Council's Planning Case Officer
- Site Supervisor and Foreman

27.2 It is advised that the site supervisor establishes their own listing of contact details at the pre-start site meeting, and displays this in their office for general use as necessary.

28.0 BIBLIOGRAPHY

- British Standard 5837:2012 –
"Trees in Relation to Design, Demolition and Construction - Recommendations"
- British Standard 3998:2010 –
"Recommendations for Tree Work"
- National Joint Utilities Group Publication Volume 4 –
"Guidelines for the planning, installation and maintenance of utility services in proximity to trees"
- Wildlife and Countryside Act 1981
- Town and Country Planning Acts







TREE SURVEY NOTES

This Tree Survey has been undertaken within the recommendations of British Standards 5837:2012 and current arboricultural best practice.

- Each tree has been numbered and, where instructed, for future identification on site, has been tagged using small durable metal or plastic tags.
- Due to variations of existing ground levels through the site, height dimensions are estimated and are given in metres. Accurate heights, measured with the aid of optical instruments can be provided where instructed.
- Trunk/stem diameters are measured in mm at 1.5 metres above ground level, using a standard measuring tape as defined by British Standards, unless otherwise stated.
- Estimated branch spread is taken in metres from the centre of the trunk, at the four cardinal points of a compass, to achieve an accurate representation of the crown shape which will be recorded on the tree survey plan.
- An assessment of a tree's age classification is made in terms of its maturity within the site's landscape and defined as:

Y	=	young trees
SM	=	semi-mature trees
EM	=	early mature trees
M	=	mature trees
OM	=	over-mature trees

- An assessment of a tree's physiological condition is defined as:

Good	=	fully functioning biological system showing average vitality i.e. normal bud growth, leaf size, crown density and wound closure
Fair	=	fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure
Poor	=	a biological system with limited functionality showing significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure
Dead	=	dead

- An assessment of a tree's structural condition is defined as:

Good	=	no significant structural defects
Fair	=	structural defects which could be alleviated through remedial tree surgery or management practices
Poor	=	structural defects which cannot be alleviated through tree surgery or management practices
Dead	=	dead

- An assessment of a tree's future life expectancy is defined as: <10, 10+, 20+ or 40+ years.

Categorisation of Trees

The category for each tree is assessed using the recommendations of BS5837:2012. The assessment has not considered any site-specific development proposals, but will have considered any changes on or off-site which may have an effect on the conditions surrounding the surveyed trees.

The trees have been classified into one of the following categories (and one or more sub-categories [this will however not increase the value of the tree]) and are indicated on the associated drawings by colours as indicated.

Category U				Identification colour on plan
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	- 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 (e.g. 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, or very low quality trees suppressing adjacent trees of better quality			DARK RED
Category A	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	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	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are down-graded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals, or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation value or other cultural value	MID BLUE
Category C	1 – Mainly arboricultural values	2 – Mainly landscape values	3 – Mainly cultural values	Identification colour on plan
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 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/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Clients are advised that Tree Surveys are a basic data collection exercise and record of tree condition at the time of survey. This will identify any visible signs of ill-health or major defects, advising a further detailed investigation where appropriate. This will most often take the form of a request for either "full ground level inspection" or "climbing inspection required". There may also be a further reference to the need for "decay detection equipment" to aid diagnosis. A tree survey does not include a comprehensive schedule or specification of remedial tree works, but may contain a guide to the work which might be undertaken by a prudent tree owner, purely for reasons of health and safety.

A Tree Survey should not be confused with a Tree Inspection or Arboricultural Implication Assessment, which are totally separate exercises.

TREE SURVEY REPORT				
	Client:	PWP Architects on behalf of LRH Homes	Site:	Belmont Castle, Portsdown Hill Road, PO9 3JY
	Date:	22 May 2014	Consultant:	Alex Monk TechCert (Arbor A), NCH Arb
	Tagged:	No	Weather:	Showers

Notes:-

1. It may be advised that some trees should have the ivy removed to enable a re-survey to be carried out. This would also alleviate the tree from becoming suppressed, carrying additional weight that increases the chance of windthrow due to a larger dense crown area, and only receiving restricted light. Unless otherwise stated, in order to prevent regrowth, it is only necessary to remove a 300mm section of ivy and clear around the base
2. It may be advised that it was only possible to estimate the diameter of some trees because of ivy smothering, dense vegetation, or trees located off-site with no access.
3. The estimated remaining contribution in years, and the tree grading category have been calculated for the current situation and may alter where further investigation works are advised.
4. Some trees or groups may have been given an interim grade. The reason for the interim grading is addressed in the timescales given as this may have a bearing on health and safety and/or any development proposals.
5. Tree Groups have been assessed with estimated and representative data.
6. This is not a Tree Works Schedule. Any preliminary management recommendations are listed in the interests of health and safety and should be carried out by a prudent tree owner.
7. Any management recommendations are suggested for reasons of health and safety only, regardless of development proposals at this stage. However, the defects requiring remedial tree surgery are by their very nature potential wildlife habitats, including protected species which needs consideration prior to any tree surgery works commencing.

TREE PRESERVATION ORDER/CONSERVATION AREA:

The Local Authority has confirmed that some trees are protected by Tree Preservation Order No 1873 January 2007 (see trees annotated in red).

Tree No	Species	Ht (m)	Single/Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				Ht of Crown AGL (m)				Life Stage	Physiological Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
1	Flowering Cherry <i>Prunus spp</i>	4	MS >5	190	1.0	2.0	2.0	1.5	1.0	1.0	1.0	1.0	SM	Good	Multi-stemmed at 1m above ground level Low hanging branches Previously crown reduced Good shape and form Tarmac road 4m to South	None required at time of survey	20+	C1
2	Weeping Birch <i>Betula pendula 'Youngii'</i>	3	MS <6	140	1.0	1.5	3.0	2.0	0.0	0.0	0.0	0.0	SM	Fair	Old pruning wound on trunk occluding Bifurcated at 1m above ground level Low hanging branches Previously crown reduced Road 3m to South	None required at time of survey	10+	C1

Tree No	Species	Ht (m)	Single/Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				Ht of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
3	Flowering Cherry <i>Prunus spp</i>	6	S	240	3.0	4.0	4.0	3.0	3.0	3.0	2.0	3.0	SM	Good	Multi-stemmed at 1.5m above ground level Epicormics in crown Road 3m to South Previously crown reduced	None required at time of survey	40+	C1
4	Common Yew <i>Taxus baccata</i>	10	S	360	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	SM	Fair	Basal stubs Epicormics on trunk Deadwood and stubs Trifurcated at 2m above ground level with included bark Crown shape distorted due to group pressure Road 7m to South	None required at time of survey	40+	B1+2
5	Common Yew <i>Taxus baccata</i>	10	MS <6	480	6.0	3.5	2.0	3.0	2.0	2.0	2.0	2.0	EM	Good	Basal stubs Old pruning wounds at base occluding Bifurcated at 1m above ground level Bark wound at 1m above ground level on main trunk occluding Included bark where two stems join on main trunk at 5m above ground level Crown shape distorted due to group pressure	None required at time of survey	40+	B1+2
6	Common Yew <i>Taxus baccata</i>	8	S	300	4.5	3.0	3.0	2.0	2.0	2.0	2.0	2.0	SM	Good	Basal stubs Old pruning wounds on trunk occluding Deadwood and stubs Epicormics on trunk Trifurcated at 3.5m above ground level Crown shape distorted due to group pressure	None required at time of survey	40+	B1+2

Tree No	Species	HT (m)	Single/Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				Ht of Crown AGL (m)				Life Stage	Physiological Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
7	Common Yew <i>Taxus baccata</i>	7	MS <6	330	3.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	SM	Poor	Basal stubs Ground excavated around root bole - probably by animals Two stems removed leaving old pruning wounds with decay Cracking on trunks on North stem with decay Bifurcated at 1m above ground level Deadwood and stubs Old pruning wounds on main trunk Included bark at 1.5m between two main stems Bark wound occluding in crown Crown shape distorted due to group pressure Poor shape and form	None required at time of survey	10+	C1+2
8	Myrobalan Plum <i>Prunus cerasifera</i>	7	MS <6	230	2.0	4.0	2.0	3.0	2.0	2.0	2.0	2.0	SM	Fair	Bifurcated at 1m above ground level Old pruning wounds on main trunk Epicormics in crown Deadwood and stubs Crown shape distorted due to group pressure	None required at time of survey	20+	C1+2
9	Previously removed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Monterey Cypress <i>Cupressus macrocarpa</i>	13	S	740	4.0	6.0	7.0	7.0	1.5	1.0	1.0	1.0	M	Fair	Growing on slope Deadwood and stubs Crown shape distorted due to group pressure	None required at time of survey	20+	B1+2

Tree No	Species	H1 (m)	Single/Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				HT of Crown AGL (m)				Life Stage	Physiological Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
11 TPO T1	Common Beech <i>Fagus sylvatica</i>	19	S	910	10.0	10.0	8.0	10.0	2.0	2.0	2.0	2.0	M	Fair	Large buttress roots Large old pruning wounds on trunk occluded and occluding with decay Saprophytic fungus growing on decayed wood Epicomis Storm damage in crown Minor deadwood and stubs Road 5m to North and East	Climbing inspection to investigate decay in old pruning wounds within 1 month	40+	B1 Interim
12	Norway Maple <i>Acer platanoides</i>	16	S	480	7.0	3.0	6.0	7.0	5.0	5.0	5.0	5.0	EM	Good	Deadwood and stubs Trifurcated at 3m above ground level	None required at time of survey	40+	B1
13	Common Sycamore <i>Acer pseudoplatanus</i>	17	MS <6	500	4.0	5.0	6.0	3.0	5.0	4.0	3.0	5.0	EM	Fair	Trifurcated at ground level with included bark Basal stubs Deadwood and stubs Crossing branches	None required at time of survey	40+	C1
14	Common Sycamore <i>Acer pseudoplatanus</i>	16	S	580	5.0	7.0	7.0	5.0	3.0	3.0	3.0	3.0	EM	Fair	Previously pollarded Multi-stemmed at 3m above ground level Old pruning wounds on trunk and in crown	None required at time of survey	40+	B1+2
15	Common Holly <i>Ilex aquifolium</i>	9	MS <6	400	3.0	4.0	4.5	2.5	2.0	2.0	2.0	2.0	EM	Fair	Multi-stemmed at ground level Basal suckers	None required at time of survey	20+	C1
16	Bay Laurel <i>Laurus nobilis</i>	7	MS >5	370	4.0	3.0	5.0	3.0	2.0	2.0	2.5	2.0	EM	Fair	Multi-stemmed at ground level Minor deadwood Basal suckers	None required at time of survey	20+	C1
17	Common Elder <i>Sambucus nigra</i>	7	MS <6	260	2.5	3.0	3.0	3.0	2.5	2.5	2.5	2.5	EM	Fair	Multi-stemmed at ground level Grows behind existing garage Low hanging branches Ivy on trunk and in crown Minor deadwood in crown	None required at time of survey	10+	C1+2
18	Purple Leaf Norway Maple <i>Acer platanoides</i> 'Crimson King'	10	S	320	5.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	SM	Good	Exposed surface roots Grows in close proximity to garage	None required at time of survey	40+	B1

Tree No	Species	H1 (m)	Single/Multi-Stemmed (S or MS)	Stem Diam (mm)	Branch Spread (m)				H1 of Crown AGL (m)				Life Stage	Physio-logical Condition	Structural Condition and General Observations	Preliminary Management Recommendations	Est. Rem. Contrib. (Yrs)	Cat
					N	E	S	W	N	E	S	W						
19 TPO T3	Common Yew <i>Taxus baccata</i>	11	S	470	4.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	EM	Fair	Epiconics on trunk Crown shape distorted Minor deadwood in crown Old pruning wounds on trunk	None required at time of survey	40+	B1
20	Norway Maple var. <i>Acer platanoides 'Globosum'</i>	7	S	110	1.0	1.5	2.0	2.0	2.0	2.0	2.0	2.0	Y	Good	Developing tree Bark wounds on trunk Crown shape distorted	None required at time of survey	40+	C1+2
21	Purple Leaf Norway Maple <i>Acer platanoides 'Crimson King'</i>	6	S	120	2.0	1.5	1.0	2.0	1.5	1.5	1.5	1.5	Y	Good	Developing tree Bark wounds on trunk	None required at time of survey	40+	C1+2
22	Purple Leaved Plum <i>Prunus cerasifera 'Atropurpurea'</i>	8	S	210	3.0	2.5	4.0	5.0	2.0	2.0	2.0	2.0	SM	Fair	Multi-stemmed at 2m above ground level Grows on slope Minor deadwood in crown Crown shape distorted due to group pressure	None required at time of survey	20+	C1+2
Grp 1	Common Sycamore	11	MS	260	-	-	-	-	-	-	-	-	SM	Fair	Multi-stemmed at ground level Small group growing on slope Trunks and crown shapes distorted due to group pressure	None required at time of survey	40+	C2
Grp 2	Common Sycamore Common Yew Norway Maple	14	S	See below	-	-	-	-	-	-	-	-	EM	Good	Linear group growing on site boundary Trunks and crown shapes distorted due to group pressure Ivy on trunks Minor deadwood in crowns	None required at time of survey	40+	B2
G2.1			S	470														
G2.2			S	460														
G2.3			S	350														
G2.4			S	370														
G2.5			S	180														



The original manuscript was deposited with the British Library as part of the Bodleian Manuscript Project. The original manuscript has been digitized and is available online at <http://www.bodleian.co.uk/manuscript>. It is also available in print form from the Bodleian Press.





BS5837:2012 TREE ROOT PROTECTION AREA SCHEDULE			
	Client:	PWP Architects on behalf of LRH Homes	Site:
	Date:	22 May 2014	Consultant:
			Belmont Castle, Portdown Hill Road, PO9 3JY
			Alex Monk TechCert (Arbor A), NCH Arb

Notes:

- 1 This is an assessment of the Root Protection Area (RPA) required, based on the individual tree data collected and Section 4.6.1 of BS5837:2012.
- 2 At this juncture this document is for your sole guidance and ongoing discussions purposes only and is not intended for general circulation, as it assumes that all but the 'U' trees will be retained, which clearly may not be the case.
- 3 For all single stem trees with a stem diameter greater than 1250mm, and multi-stem trees with a stem diameter greater than 1500mm, the calculated RPA has been capped at 707m² in accordance with Section 4.6.1 of BS5837:2012.

TREE PRESERVATION ORDER/CONSERVATION AREA

The Local Authority has confirmed that some trees are protected by Tree Preservation Order No 1873 January 2007 (see trees annotated in red).

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m ²)
1	Flowering Cherry	C1	MS >5	190	2.28	16.33
2	Weeping Birch	C1	MS <6	140	1.08	8.87
3	Flowering Cherry	C1	S	240	2.88	26.06
4	Common Yew	B1+2	S	360	4.32	58.64
5	Common Yew	B1+2	MS <6	480	5.76	104.24
6	Common Yew	B1+2	S	300	3.60	40.72
7	Common Yew	C1+2	MS <6	330	3.96	49.27
8	Myrobalan Plum	C1+2	MS <6	230	2.76	23.93
9	Previously removed	-	-	-	-	-
10	Monterey Cypress	B1+2	S	740	8.88	247.76
11 TPO T1	Common Beech	B1 Interm	S	910	10.92	374.67
12	Norway Maple	B1	S	480	5.76	104.24
13	Common Sycamore	C1	MS <6	500	6.00	113.11
14	Common Sycamore	B1+2	S	580	6.96	152.20
15	Common Holly	C1	MS <6	400	4.80	72.39
16	Bay Laurel	C1	MS >5	370	4.44	61.94
17	Common Elder	C1+2	MS <6	260	3.12	30.59
18	Purple Leaf Norway Maple	B1	S	320	3.84	46.33
19 TPO T3	Common Yew	B1	S	470	5.64	99.95

Tree No	Species	Category	Single/ Multi-Stemmed (S or MS)	Stem Diameter (mm)	Initial Linear Root Protection Distance (Radius m)	Root Protection Area (m ²)
20	Norway Maple var.	C1+2	S	110	1.32	5.47
21	Purple Leaf Norway Maple	C1+2	S	120	1.44	6.52
22	Purple Leaved Plum	C1+2	S	210	2.52	19.95
Grp 1	Common Sycamore	G2	MS	280	3.36	35.47
Grp 2	Common Sycamore Common Yew Norway Maple	B2	S	See below	See below	See below
G2.1		0.00	S	470	5.64	99.95
G2.2		0.00	S	460	5.52	95.74
G2.3		0.00	S	350	4.20	55.42
G2.4		0.00	S	370	4.44	61.94
G2.5		0.00	S	180	2.16	14.66







TREE WORKS SCHEDULE			
	Client:	PWP Architects on behalf of LRH Homes	Site:
	Date:	June 2014	Consultant:
			Alex Monk

Tree No.	Species	Recommended Works
1	Flowering Cherry	• Remove
2	Weeping Birch	• Remove
3	Flowering Cherry	• Remove
4	Common Yew	• Remove
5	Common Yew	• Remove
6	Common Yew	• Remove
7	Common Yew	• Remove
8	Plum	• Remove
11	Common Beech	• Crown raise on North and East sides to give 4m clearance above access road
15	Common Holly	• Crown raise on East side to give 4m clearance above access road
16	Bay Laurel	• Crown raise on West side to give 4m clearance above access road
21	Purple Leaf Norway Maple	• Lift and relocate to a suitable part of the site
22	Purple Leaf plum	• Prune canopy back on South side to give 1.5m working space

- All tree works are advised to be carried out between July and September or November and February. Tree works should also avoid the season for nesting birds.
- All tree works should be carried out in accordance with current best practice guidelines and BS3998:2010 – Tree Work Recommendations.
- We recommend the use of an Arboricultural Association Approved Contractor or an ISA Certified Arborist/Tree Worker suitably insured and experienced to carry out the tree works.



TREES AT _____:

SUMMARY OF TREE PROTECTION MEASURES

Introduction

This leaflet shall be issued to all site personnel as part of their induction briefing.

It describes in summary form the precautions that site personnel shall at all times follow, to ensure that the existing trees on the site come to no harm.

The precautions described are neither arbitrary nor reducible and must be adhered to in full.

These precautions are necessary because unprotected trees are very vulnerable to damage during demolition and construction works.

Furthermore, many of the trees on the site are under **LEGAL PROTECTION** and damaging them can result in heavy fines.

Two common misconceptions about trees:

MYTH: Trees have deep taproots and so shallow excavations will not harm the tree.

FACT: 90% of all tree's roots are found in the top 600mm of soil, all excavations near to trees are likely to cause root damage which can kill the tree.

MYTH: Trees will quickly heal over any bark wound, with no ill effect.

FACT: Bark wounds take years to heal and larger ones never do; missing bark can lead to disease and even the death of the tree.



Tree Protection

All trees adjacent to unsupervised work areas have been protected by fencing.

This fencing must be respected at all times and no attempts shall be made to damage, bypass or ignore it.

In areas designated for supervised working, no works shall be undertaken without the supervisor being present or without him/her issuing a 'carry on' chit.

Prohibitions Adjacent to Trees

Inside the exclusion area of the tree protection, the following prohibitions shall apply:

- No digging or scraping
- No storage of plant or materials
- No vehicular access
- No fire lighting
- No handling, discharge or spillage of any chemical substance
- No water-logging

In addition to the above, further precautions shall be taken near to trees:

- A 10m separation distance shall be observed between trees and any substance injurious to their health, including fuels, oil, bitumen, cement (including washings) builders' sand, concrete mixing and other chemicals.
- No fire shall be lit such that flames come within 5m of any foliage; this shall be taken to mean a fire separation distance to the leaved of 20m.

Avoiding Damage to Stem and Branches

Care shall be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights, can operate without coming into contact with trees.

Consequently, any transit or traverse of plant in proximity to trees shall be conducted under the supervision of a spotter to ensure that adequate clearance is at all times maintained.

In some circumstances, it may be impossible to achieve this, necessitating the pruning of the tree.

If this is necessary, a specialist team shall be called in following referral to the project Arboriculturist.

No tree pruning shall be undertaken by demolition or construction personnel.

Asking for Help

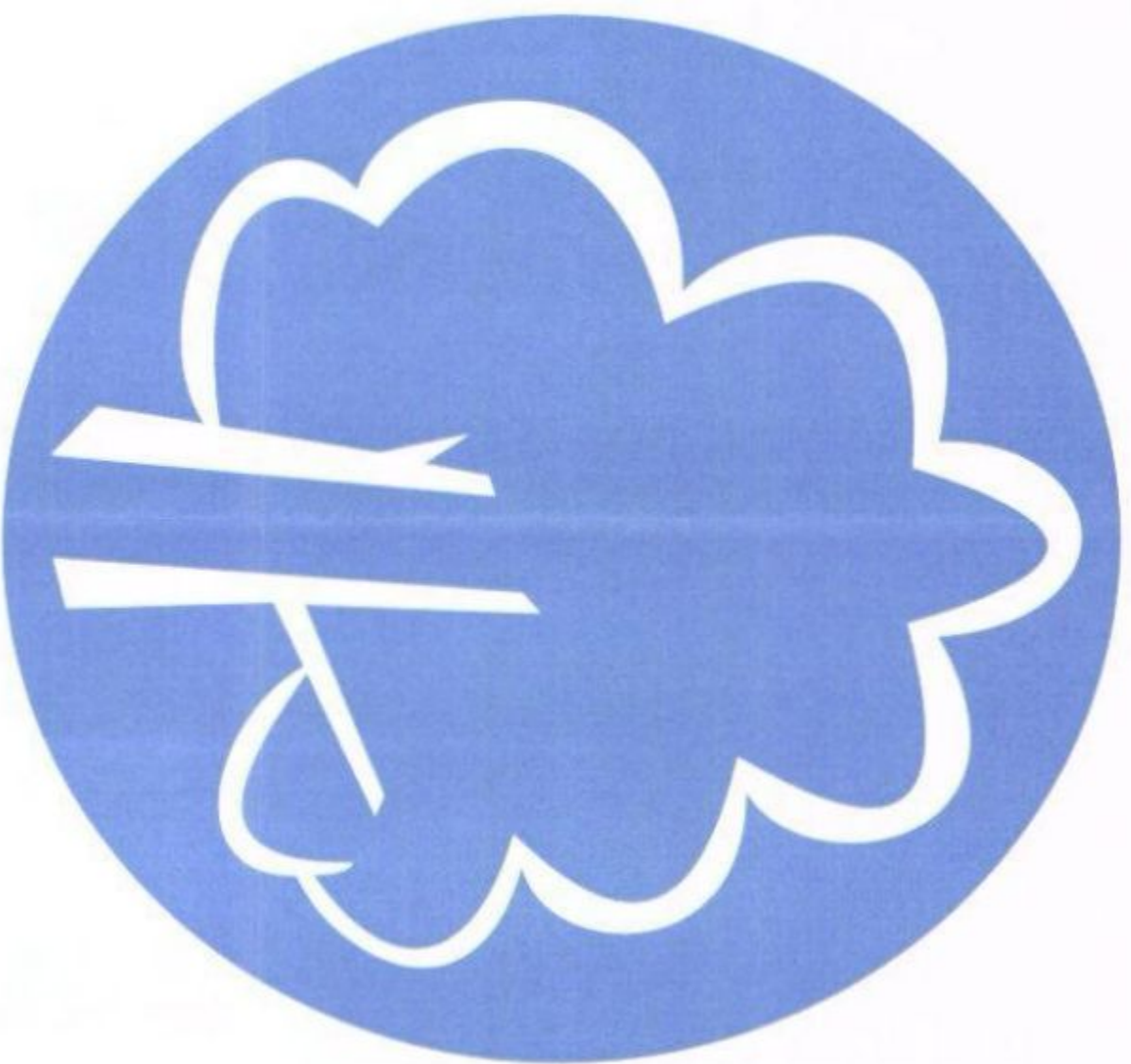
If you see any damage to a tree or its protective fencing, or if you need a tree pruning for plant clearance, contact **CBA Trees** as follows:

Office Telephone: 023 8098 6229

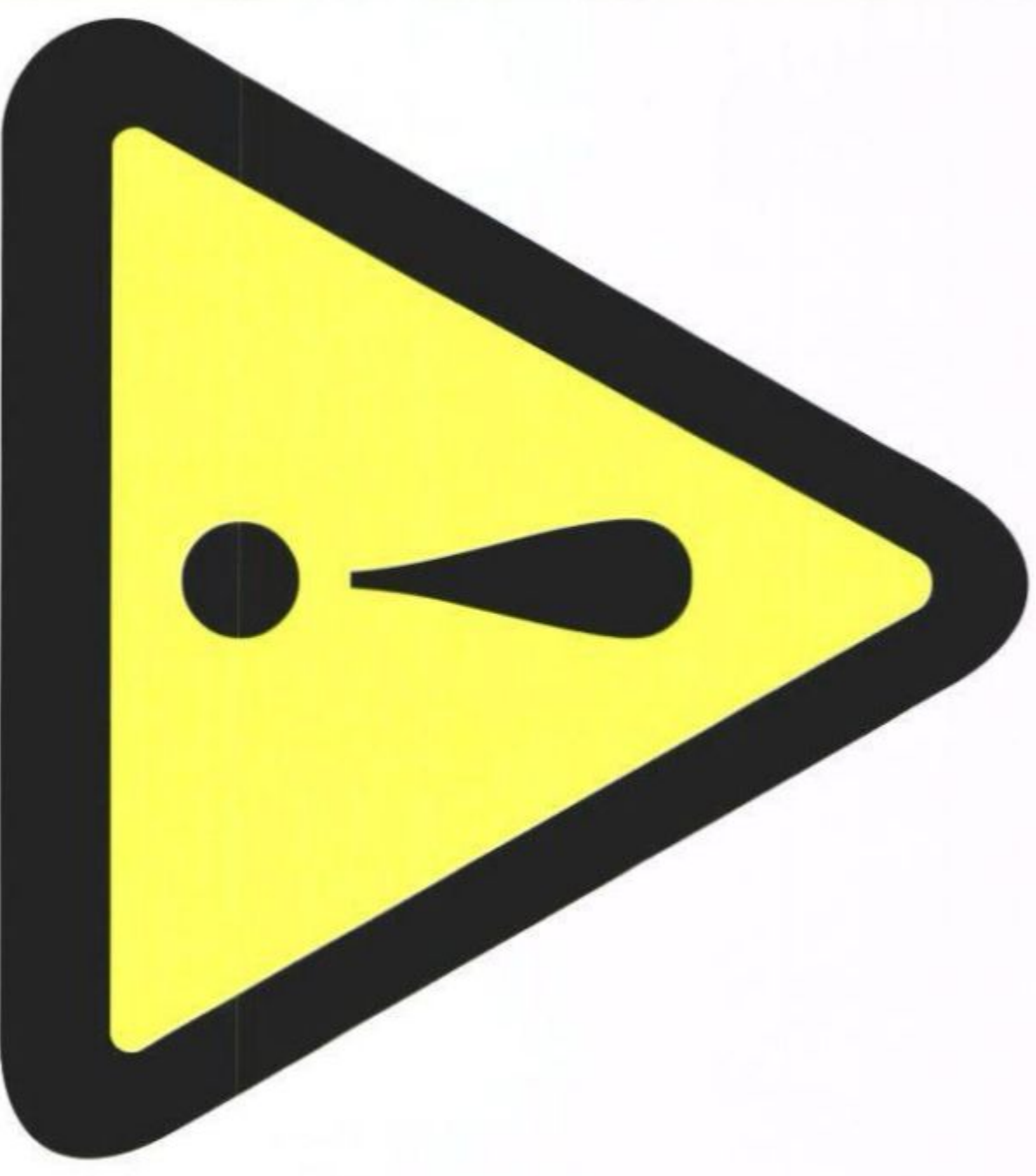
REMEMBER:

**ALL TREE DAMAGE IS
AVOIDABLE –**

SO AVOID IT!



**PROTECTIVE FENCING. THIS
FENCING MUST BE
MAINTAINED IN ACCORDANCE
WITH THE APPROVED PLANS
AND DRAWINGS FOR THIS
DEVELOPMENT.**



**TREE PROTECTION AREA
KEEP OUT !**

(TOWN & COUNTRY PLANNING ACT 1990)

**TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A**

TREE PRESERVATION ORDER.

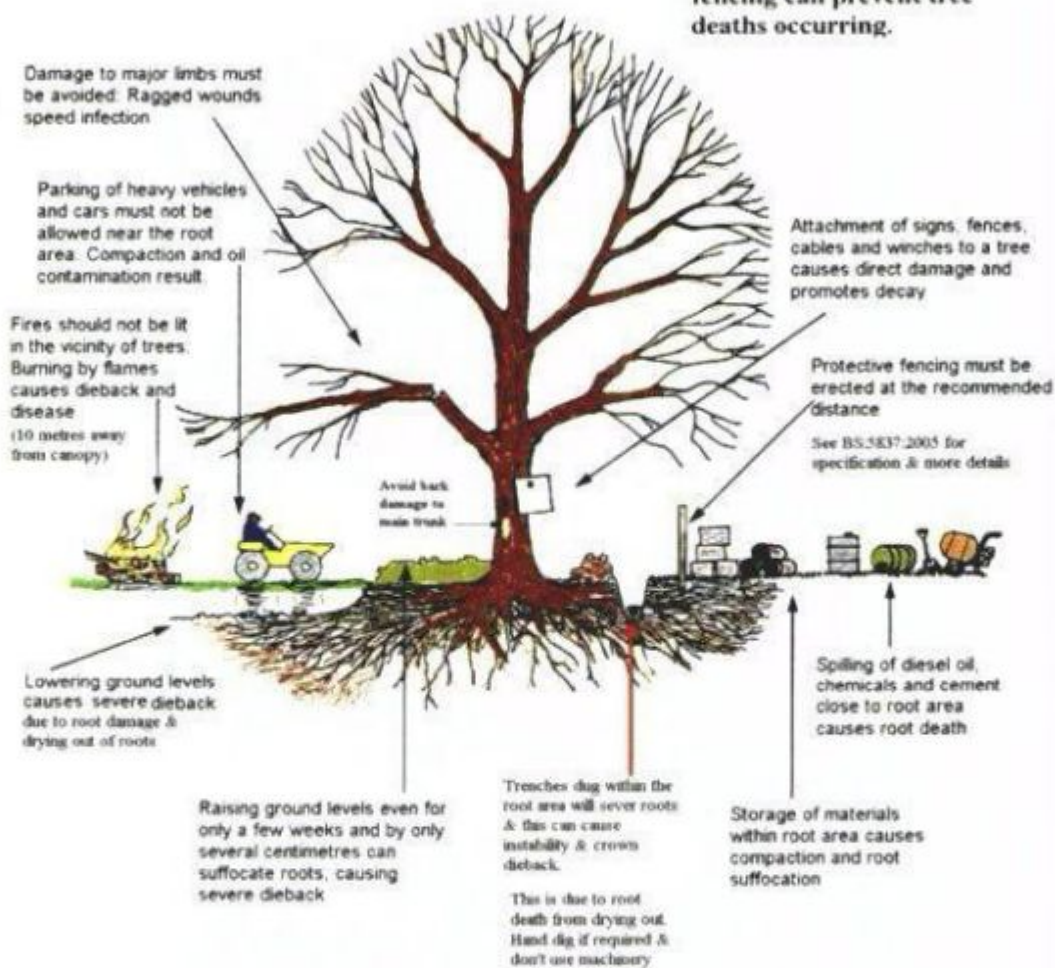
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY

LEAD TO CRIMINAL PROSECUTION

**ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY**

Common causes of Tree Death

The use of properly positioned protective fencing can prevent tree deaths occurring.



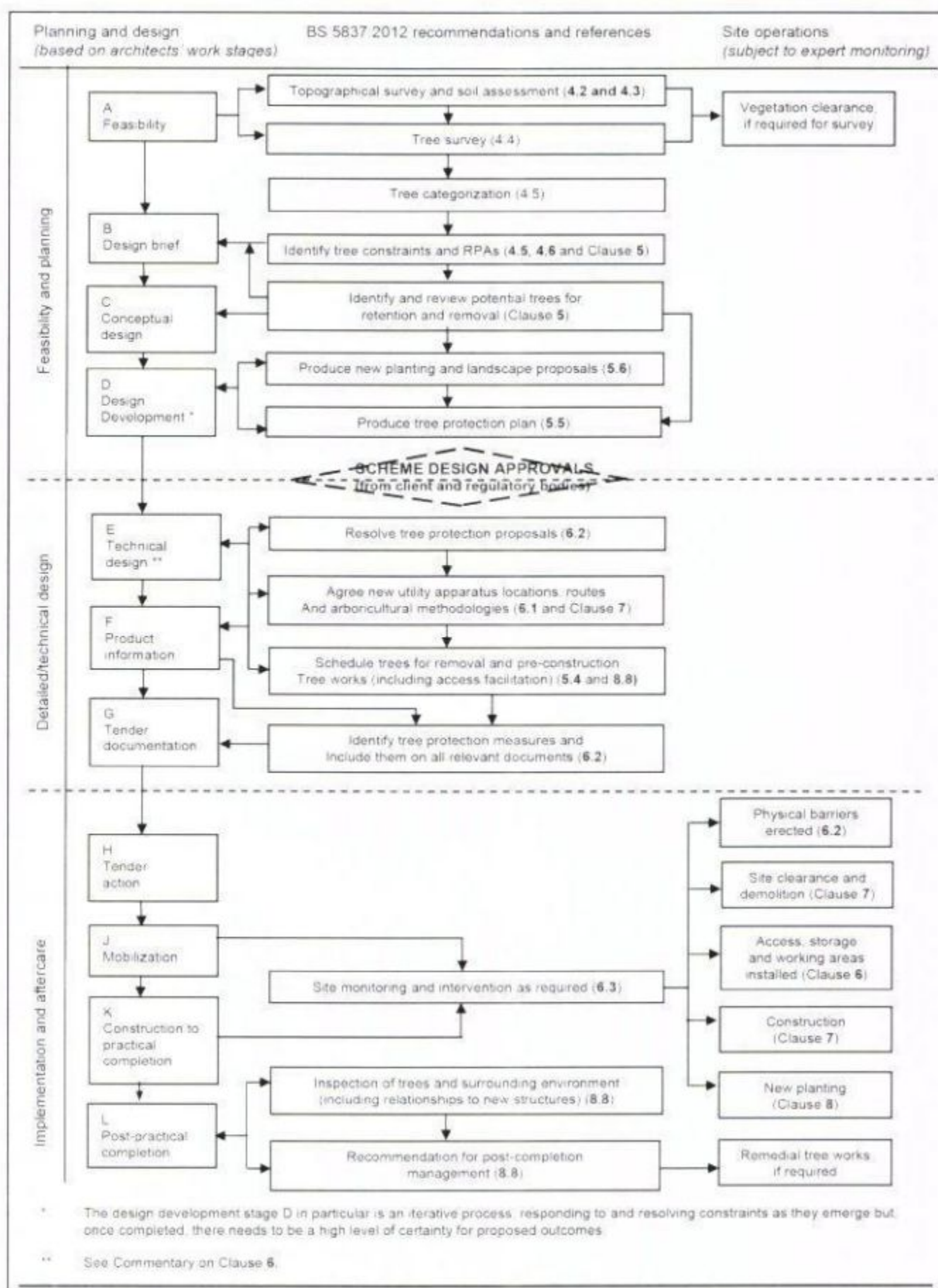
Please use copies of this as an on-site poster for personnel

(Source: Arboricultural Information Exchange website, 2005)





Figure 1 The design and construction process and tree care







**The Professional Arboricultural
Consultancy**

**QUALIFICATIONS OF ALEX MONK
ARBORICULTURAL CONSULTANT
CBA TREES**

Alex Monk *TechCert.Arbor.A, NCH.Arb* has had many years experience as an independent tree surgeon/surveyor, running his own small business in Hampshire. He joined CBA Trees in May 2004 as a trainee surveyor/consultant, and has become a reliable and knowledgeable member of our team.

Having studied for his arboricultural qualifications at Merrist Wood College in Surrey, Alex has attained the AA.Tech.Cert. He has also been successful in attaining his Bat Handling Licence (English Nature), which is an asset both to him personally and to the Company.

Alex is a conscientious, mature consultant who currently undertakes TPO Reviews, Tree Surveys, Health & Safety Audits, Arboricultural Implications Assessments and Arboricultural Development Statements on behalf of his client portfolio which includes many Local Planning Authorities as well as developers and individual clients.



NOTE
Trees marked * are indicative
only and should be verified by
Surveyor

- KEY
- category A trees
 - category B trees
 - category C trees
 - category R trees

CLIENT
LRH Homes Ltd
via FWP Architects
JOB TITLE
Belmont Castle
Portsmouth Hill Road
Bedhampton
DRAWING TITLE
Tree Survey Plan

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CBA 6436.03
SCALE
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DATE
June 2007

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CBA
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