COLIN G. BASHFORD MBE

PERMIT

ARBORICULTURAL DEVELOPMENT STATEMENT (incorporating Arboricultural Implications Assessment and Method Statement in accordance with BS5837:2005)

Client:	Mr and Mrs Beadon
Site:	16 Victoria Avenue, Hayling Island, Hampshire
Arboricultural Consultant:	Colin G Bashford MBE
Date:	4th November 2010

SUMMARY

The proposal is for the construction of an extension to the front of the existing dwelling, with a walled and iron railing to the eastern side and the road side boundaries. This work is to be undertaken at 16 Victoria Avenue, Hayling Island, Hampshire This Arboricultural Development Statement (ADS) will demonstrate the necessary protection and construction measures for any retained trees.

***Should it be decided to retain in particular the mature Large Leaved Lime** at the front L/H corner of the site and its immediate neighbouring property, it will then be necessary to read this Arboricultural Development Statement in association with the Tree Protection Plan (CGB 1004/2). This plan identifies the individual trees and groups of trees to be removed, and those to be retained. It follows the initial tree survey, an implications assessment and discussions to minimise the impact upon the existing retained tree.*

Whilst the emphasis of any such report is predominantly that of preservation and tree protection and identifies methodologies to provide protection for trees, to ensure their healthy and safe retention during and post development, as guided by BS5837:2005, and current best practice. ***It is also essential to consider the future safe condition of the tree and any hazard it might reasonably present to the surrounding area and third parties as well as the tree owners and their property.***

A total of one individual tree and a line of six trees from an old existing hedge could be retained within the development as detailed within this report. ***It is my considered opinion that now is the time to remove these trees, to avoid real potential danger and obtain a new replacement planting.***

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Supporting Information/Appendices

CGB1	Tree Survey Schedule
CGB2	Tree Survey Plan and Tree Protection Plan

Guiding Principles/Appendices - Not provided unless trees are to be retained.

CGB5	Tree Protection Guidance Leaflet Construction Exclusion Zone Site Notice Common Causes of Damage During Construction Works
CGB6	Flow Diagram Summarising the Planning Process for Trees on Development Sites
CGB7	Utilities Service Connection General Method Statement
	Provided as CGB 3
CGB8	Qualifications and Experience

PART 1
ARBORICULTURAL IMPLICATIONS ASSESSMENT

1.0 INTRODUCTION

1.1 There is a development proposal for the extension to the front of the existing dwelling. The site is located at 16 Victoria Avenue, Hayling Island, Hampshire.

1.2 The application proposal is for the demolition of existing garage and small extension at the first floor level at the front of the dwelling and the construction of a changed ground floor level and extended first floor level to the front elevation of the house. The garage is to be reconstructed and slightly increased in width. The north and east boundaries of the property are to be enhanced with the construction of a brick wall with iron railing inserts.

1.3 Document disclosure provided:

- Site layout along with existing and proposed drawings are provide to me by RMW Associates.
- Structural information provided by RMW Associates.
- Drainage details not provided but assumed connected to existing.

1.4 The clients agent (RMW) provided the original site plans and locations of the trees, and these have been the basis for the production of subsequent plans. Whilst I have had to date no input in defining the contents of the development plan, I am pleased to confirm that it broadly conforms to the requirements of section 4.1.5 of BS5837:2005.

1.5 My 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 so that is acceptable in arboricultural terms.

2.0 CLIENT'S BRIEF

2.1 In line with my written quotation and verbal instructions, information has been compiled in accordance with British Standard 5837:2005 – *"Guide to Trees in Relation to Construction – Recommendations"* and current best practice advice.

- To undertake a Tree Survey, appended at CGB1004/1

- To produce a Tree Survey Plan that relies on the accuracy of the layout drawing provided by the client's agent.

- To undertake an arboricultural implications assessment (AIA) of the proposed development as 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, 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

3.0 DESCRIPTION OF THE SITE

The site is a detached house built on the southern side of Victoria Avenue, Hayling Island, Hampshire, towards the middle of the site with areas of garden on all sides. In the North east corner there is a large multi-stemmed mature lime tree and along the eastern end of the front boundary to the road there are six beech trees which are clearly the remnants of an old beech hedge that has been left to grow out. These beech trees are now etiolated poor specimens, each of which show symptoms of increasing instability.

The lime tree straddles the side boundary between 16 and 18 Victoria Avenue. At this time it would be almost impossible to determine the ownership of the tree.



4.0 THE TREE STOCK

4.1 A tree survey was undertaken (CGB) on Wednesday the 3rd November 2010. The tree survey exercise identified one (1) individual tree of consequence and a short line of six (6) trees that were clearly the poor remnants of an old out-grown beech hedge. The beech trees are etiolated and increasingly unstable. The Lime is a multi-stemmed specimen at ground level and already there is included bark between each of the stems.



This will increasingly push the stems apart until they fracture at ground level. The exposure of the tree to typical gales from the coast can only exacerbate the risk factor of this tree. A tree survey schedule and plan are appended at CGB1

4.2 I was not advised as to whether the indicated trees were protected by a Tree Preservation Order. I was also unaware as to whether the site was covered by a Conservation Area Order.

4.3 Given the surveyed and assessed condition of the trees I contacted Havant BC to make necessary enquiries of them. I am advised by HBC that the site is not in a Conservation Area and the trees are not covered by a Tree Preservation Order. It is therefore the case that there are no planning designations that would require notification to Havant BC for the intention to carry out work on these trees or to make an application to fell them.

4.4 <u>Tree Categorisation Method</u>

Category R = Trees in such a condition that any value would be lost within 10 years, or should be removed for reasons of sound arboricultural management. All trees surveyed were assessed as R' grade

Note:
"Category R trees are those which would be lost in the short term for reasons connected with their physiological or structural condition. For this reason, they should not be a consideration in the planning process."

Category A = Trees of high quality and value: in such a condition as to make a substantial contribution, (40 years or more is recommended).

There were no individual 'A' grade tree on or adjacent to the site at the time of surveying.

Category B = Trees of moderate quality and value, capable of making a significant contribution for in excess of 20 years. There were no individual 'B' grade trees on or adjacent to the site at the time of surveying.

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 no individual 'C' grade trees on or adjacent to the site at the time of surveying.

4.5 The following tables summarise the individual tree survey data:

4.5.1 Table 1 showing species distribution

Species	Number of Trees
Lime	1
Beech	6
Total:	**7**

4.5.2 Table 2 showing age class distribution

Age	Number of Trees
Young	-
Middle Aged	6
Mature	1
Over Mature	-
Dead	-
Total:	7

4.5.3 Table 3 showing BS5837:2005 physiological condition

Physiological Condition	Number of Trees
Good	-
Fair	-
Poor	7
Dead	-
Total:	**7**

4.5.4 Table 4 showing grade distribution

Grade	Number of Trees
R	7
A	-
B	-
C	-
Total:	**7**

4.6 **The 6 (six) Beech trees are identified as a grown out hedge but are listed as individual trees in the above tables**.

4.7 For a more details of the existing tree stock, refer to the Tree Survey Schedule (appended at CGB1).

5.0 PROPOSED TREE RETENTION AND TREE LOSS

5.1 In accordance with the recommendations contained within BS5837:2005 *"Trees in Relation to Construction"*, an experienced arboriculturist has assessed the requirements for tree protection and the Root Protection Area (RPA). The implications of the proposed development **should the trees be retained** are detailed below, along with any mitigating measures to ensure the retention of these trees.

5.2 Details of service location proposals have not been forwarded to CGB 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.

5.3 As part of the assessment, dimensions have been scaled and considered from the provided drawings and then modified, to include the relevant Tree Survey data and the information as shown on plan number CGB 1004/2

5.4 It is to be stressed that all trees might be retained if desired by the clients, however it is my considered opinion that they should all are advised for removal for reasons of sound arboricultural management, regardless of any approved development.

5.5 Summary of the implications for the trees and groups:

Tree No.	Species	BS 5837 2005 Cat	Potential cause of harm	Implication	Mitigation
1	Lime	R	• Damage to root plate from the strip foundation for the proposed boundary wall • Damage to rootplate from construction works	• Potential instability and loss of roots affecting health and physiological condition of the tree.	• Specialist design for cantilevered wall foundations over the root plate. • Alternative use of curved railings around the southern and western side of the trunks of this multi-stemmed tree. • Existing hard surfaces and presence of garage will prevent further damage of consequence to the roots

Tree No.	Species	BS 5837 2005 Cat	Potential cause of harm	Implication	Mitigation
2	6 x Beech	R	• Damage to root plate from the strip foundation for the proposed boundary wall • Damage to rootplate.	• Potential instability and loss of roots affecting health and physiological condition of the tree.	• Specialist design for bridged wall foundations on piers over the root plates. • See as for Lime tree

PART 2
ARBORICULTURAL/CONSTRUCTION METHOD STATEMENTS

NOTE: ONLY RELEVANT IF ANY OF THE TREES ARE RETAINED

6.0 PRE-COMMENCEMENT SITE MEETING

6.1 Pre-commencement site meeting

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 BC tree officer. This meeting could be used to formally agree the tree protection measures prior to commencement of the development and the associated clearance work.

7.0 PRE-DEVELOPMENT TREE WORKS

7.1 All tree works will be undertaken prior to the commencement of site preparation and construction works.

7.2 **All permitted or approved tree work** should be carried out in accordance with the British Standard *"Recommendations for Tree Work"* BS3998:1989, 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.

7.3 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. Consideration should also be given to nesting birds, and tree works should not normally be undertaken between March and May; however, care should be taken to inspect trees during the summer months for evidence of nesting birds.

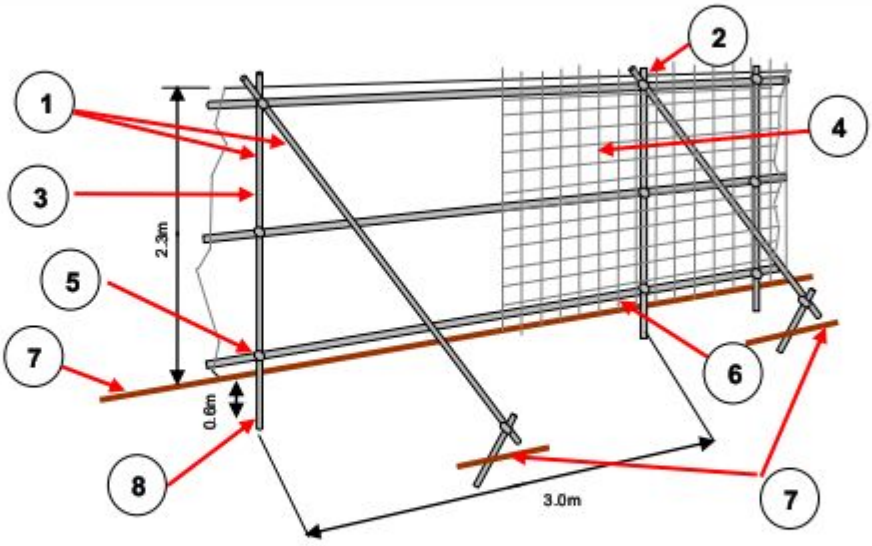
8.0 TREE PROTECTION MEASURES

8.1 Tree Protective Fencing and Tree Protection Plan

8.1.1 The protective fencing shall be erected in accordance with the location set out on the Tree Protection plan, which is appended at CB1, and will be erected prior to any site works. A copy of the Tree Protection Plan shall be made available for all site staff to see.

8.1.2 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 will be fixed securely with wire or scaffold clamps (Figure 1 below and figure 2 of BS5837:2005). Weldmesh panels on rubber or concrete feet are not resistant to impact, and should not be used in close proximity to the development

Figure 1: Tree Protective fencing specification



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

8.1.3 Once the fencing is in place it must remain *in-situ* throughout the following phases of the development/construction:

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

8.1.4 The area within the Construction Exclusion Zone (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 BC.

8.2 Additional Arboricultural Advice for Site Personnel

8.2.1 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.

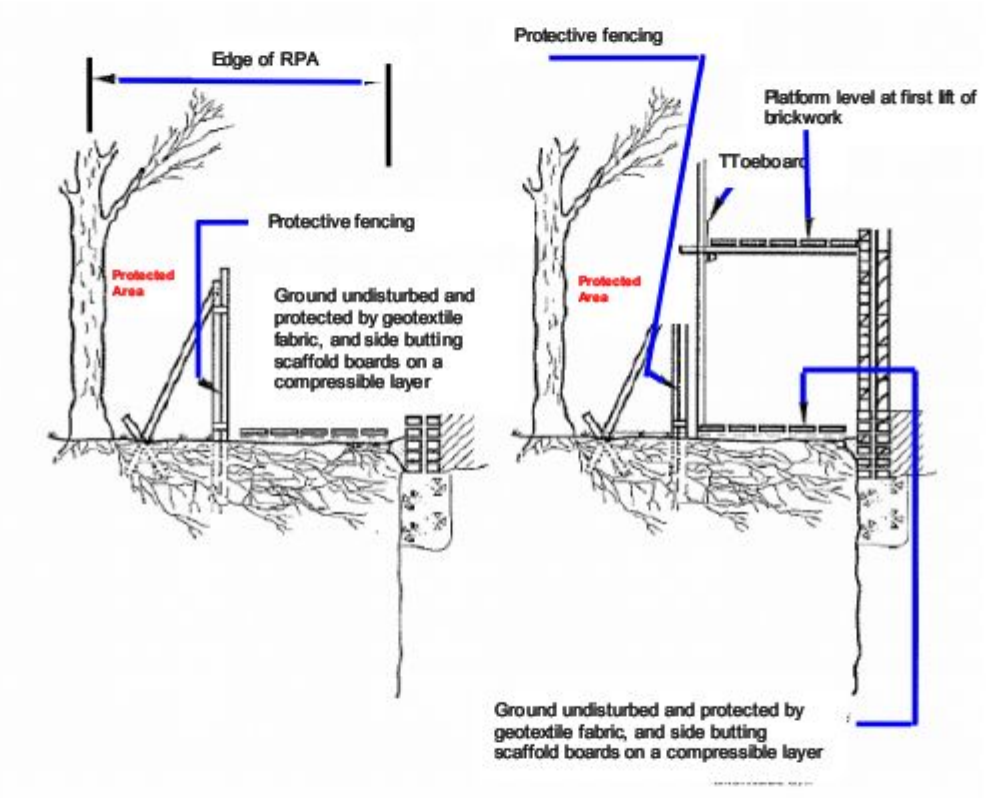
8.2.2 In order to inform site personnel of the purpose of the fencing, information notices shall be fixed to the fencing at 5m intervals. These notices shall be of all-weather construction and shall be substantially in the form of the specimen provided at appendix CB5, and shall be replaced as and when necessary.

8.3 Ground Protection and Scaffolding Specification

8.3.1 In addition, ground protection will be implemented, similar to that shown in Figure 3 of BS5837:2005, and illustrated as figure 2 below, for the area within the Root Protection Area, to allow for construction and working space. This is necessary to provide working space for construction activities, which may include implementation of foundations, and for the erection of scaffolding to aid in building. This will also be required when footpaths are installed within the root protection zone.

8.3.2

Figure 2: BS5837:2005 Ground protection and Scaffolding



Pedestrian Movements

Section 9.3.2 *"For pedestrian movements within the RPA, the installation of ground protection in the form of a single thickness of scaffold boards, on top of a compressible layer laid onto a geotextile, or supported by scaffold may be acceptable".*

9.0 GENERAL CONSIDERATIONS WITHIN AND OUTSIDE THE CONSTRUCTION EXCLUSION ZONE

9.1 Construction Exclusion Zone (CEZ)

9.1.1 Inside the Construction Exclusion Zone (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 the Council prior to the specific activity taking place.**

9.1.2 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.

- 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)

10.0 REMOVAL OF HARD SURFACES/BUILT FORM IN CLOSE PROXIMITY TO RETAINED TREES

10.1 Removal of existing surfacing, built forms or other excavations within the Construction Exclusion Zone of retained trees, must be undertaken by hand (where feasible and in line with Health and Safety polices) to avoid any surface root damage, and shall be supervised on-site by the Retained Arboricultural Consultant.

10.2 Any removal of hard surfacing, built form or other excavations in close proximity to trees will be undertaken by working only from the existing hard surface or protected ground area. The required work should then be completed with hand operated tools or appropriate machinery, but under the supervision of an arboriculturist. Any machinery or equipment to be used will need to be lightweight and run on additional ground protection, or working from the existing hard standing only.

10.3 If the area of the zone of protection around the retained trees is to be left following the removal of the existing hard surface, and before a new hard surface is laid, or the area receives soft landscaping treatment, then ground/tree protection MUST be correctly re-established immediately the hard surface removal work has been completed.

10.4 If there is a delay, for whatever reason, and the area that was previously protected by hard surfacing is left exposed awaiting a new surface, a temporary surface must be implemented, and/or Hessian sacking must be placed over any exposed roots.

10.5 Any vehicular equipment to be used in the demolition of existing buildings and build form will only be operated from existing hard surfaces or suitably protected ground when in close proximity of the RPAs of trees noted for retention. All demolition is to be away from retained trees and preferable inwards onto the existing footprint.

11.0 INSTALLATION OF HARD SURFACING IN CLOSE PROXIMITY TO RETAINED TREES

11.1 Introduction

This guidance describes the procedure required to undertake the construction of hard surfacing, i.e. car parking, whilst exerting no adverse effects on the roots to trees to be retained. It is essential to maintain adequate supplies of water and oxygen for trees through the soil. Porosity is important, particularly where the new hard surface covers an area of previously unmade ground, under which tree roots may have developed. Where hard surfacing passes beneath the tree's canopy, or where it encroaches upon the Construction Exclusion Zone of retained trees, a porous 'no dig' method of construction will be required. The construction should be engineer designed and must consist of a non-clogging gas and water permeable surface and sub-base. This should incorporate a three-dimensional cellular confinement system to prevent future rutting and underlying ground compaction. Two-dimensional tensor grids should not be used.

This Method Statement should be read in conjunction with the appropriate risk assessments.

12.0 UTILITY SERVICE CONNECTIONS

12.1 The following services will avoid the Root Protection Areas of trees and their roots where feasible, given site constraints:

Foul and surface water drains	*Electricity*
Land drains	*Telephone*
Soakaways	*Lighting*
Gas	*Signage*
Oil	*Water*

12.2 The location of all new service routes will be outside of the Root Protection Areas of the trees to be retained on site, to avoid disturbance of tree roots and ensure their healthy retention.

12.3 If services must unavoidably be installed within the RPA of retained trees, works will be carried out using trenchless techniques such as moling, laser guided boring and/or in accordance with advice appended at CB7.

13.0 SITE MONITORING AND SUPERVISION

13.1 On-going arboricultural site monitoring for the duration of the proposed development will be carried out by the retained arboricultural consultant approved by Havant BC.

13.2 This work will be undertaken by a qualified and experienced arboriculturist at pre-determined and agreed time intervals. 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), on-going liaison with all personnel involved in the site development, Council and its Tree Officer.

Examples of when an Arboriculturist would be required on site:

- ❖ *Inspection of the tree protective fencing*
- ❖ *Any works within the root protection areas of retained trees*

13.3 Any defects requiring rectification shall be notified to the Contractor/Site Manager and the client.

13.4 In addition, it is proposed that a site logbook 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 Havant BC if required, to show evidence of site monitoring.

Example pro-forma

Date	Activity	Checked	Comments/ damage noted	By whom	Signed	Action taken
13/03/10	Erection of protective fencing					
20/03/10	Inspection of protective fencing					

13.5 Havant BC's Tree Officer (or appropriate representative) will have free 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.

14.0 AVOIDING DAMAGE TO STEMS AND BRANCHES

14.1 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 should be conducted under the supervision of a banksman, in order to ensure adequate clearance from trees is maintained at all times.

15.0 REPORT DAMAGE TO TREES AND TREE PROTECTION FENCING

15.1 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 BC.

15.2 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.

16.0 REMOVAL OF PROTECTIVE FENCING

16.1 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.

16.2 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.

17.0 COMPLETION MEETING

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

18.0 FUTURE MANAGEMENT AND POST DEVELOPMENT TREE MANAGEMENT

18.1 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.

18.2 At Section 15 of BS5837:2005 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 BC to determine whether they wish to apply a Condition relating to this aspect of work.

Section 15 Post development management of BS5837:2005

15.1 Existing trees

15.1.1 *Trees growing on a site before development takes place may, if adversely affected, be in decline over a period of several years before they die. This varies greatly depending on the age, species and condition of the tree, the soil conditions, climate, and the extent of damage incurred during development. A programme of inspections and necessary work for the treatment of symptoms as they develop should be drawn up in conjunction with an arboriculturist. This programme may include recommendations for frequency of inspection and/or beneficial tree work and should take the form of an arboricultural management plan.*

15.1.2 *Where the trees in question are protected by planning controls, the planning authority should be informed and any necessary agreements obtained prior to such work.*

15.1.3 *Prior to handover, following completion of development, the arboriculturist should look for signs of intolerance to the change in conditions and the effect of the development and any accidental damage to identify the need for further tree works in addition to those originally specified at the beginning of the development process.*

15.1.4 *An arboriculturist should consider appropriate cultural operations. These may include irrigation, or measures to enhance the soil structure and organic nitrogen levels in the soil.*

15.1.5 *Where the development design incorporates the need for active management following the completion of construction works, a tree or landscape management plan should be prepared and a copy supplied to all parties who may have an interest in the future management of the site or parts of it.*

15.2 New plantings

Maintenance of newly planted trees is of particular importance during the critical establishment period, of at least two years and may, where required by planning conditions, be five years or more following planting A detailed maintenance schedule covering the establishment period should be prepared in conjunction with the landscape design proposals and appropriate arrangements made for its implementation

19.0 CONCLUSIONS

19.1 The proposed development proposals for the construction of the house extension and new boundary walls with inset iron railings have been assessed broadly in accordance with British Standard 5837:2005 – "*Trees in Relation to Construction – Recommendations*".

19.2 It is my assessed opinion that the trees identified for retention could be afforded due respect and provided adequate protection, ensuring their safe and healthy retention during the development process. **However I am of the robust opinion that all seven (7) trees currently present a real potential/imminent threat of collapse and failure and that they should be removed at this time rather than expend time, effort and expense on remedial works that would be essential if they are retained.** Any such work could not ensure their safety nor eliminate the danger that they present.

19.3 I therefore conclude that these trees should be felled prior to the commencement of any consented planning application works.

19.4 It is my opinion that the loss of the trees will not have a serious detrimental affect 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.

20.0 CONTACT LIST

20.1 It is suggested that if it is decided to retain the trees, points of contact and lines of communication are established prior to commencement of the works on site including:-

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

20.2 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.

21.0 BIBLIOGRAPHY

- British Standard 5837:2005 –
  "Trees in Relation to Construction –Recommendations"

- British Standard 3998:1989 –
  "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

COLIN G. BASHFORD MBE