

**Tree Survey**  
**Arboricultural Impact Assessment**  
in accordance with BS 5837 : 2012

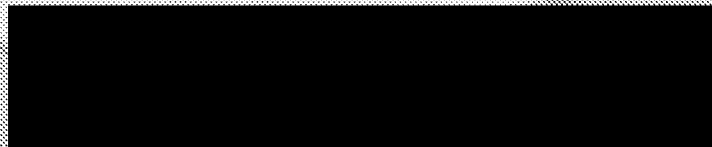
*'Trees in relation to design, demolition and construction - Recommendations'*

Trees at  
**Riverside House, 2, Fitzalan Road,  
Arundel, BN18 9JS.**

Prepared for  
**Mr A. Burrows, Regent Properties.**  
April 2017

**ARBORTECH** (Consultancy)

The Arbor Centre, Osiers Farm, Clay Lane, West Ashling,  
Chichester, West Sussex. PO18 8DJ.



## Informative : Retained Trees & Development Sites.

### TREES NEED ROOTS FOR :

- Anchorage i.e Stability.
- Water and nutrient uptake i.e general health.
- Energy storage i.e for drought periods.
- Breathing i.e Vertical gaseous exchange

### DAMAGING TREE ROOTS MAY :

- Kill the tree.
- Weaken the tree.
- May cause the tree to fail.

### TREE ROOTS CAN BE DAMAGED BY :

(Any may deny their needs for survival)

- Root severance
- Soil compaction.
- Escape of toxic fluids i.e Oil, Bitumen.
- Impermeable surfaces i.e Concrete

### **Tree Survey.**

A Tree Survey records information about the trees on (or adjacent) a site, independently of any design proposal. Trees, groups of trees and woodlands are assessed for their physiological and structural condition and preliminary health & safety works are recommended. In addition the trees are categorised for their quality and value within the existing context. The tree categories are then differentiated on a tree survey plan.

The results of the Tree Survey may be included in the preparation of a Tree Constraints Plan which should be used to assist with layout design.

### **Arboricultural Impact Assessment.**

Further to a tree survey, consideration is given to how a proposed development and retained trees will co-exist and interact in the present and future. It can identify and remove any potential conflicts between trees and the requirements of the development.

An AIA aims to identify, evaluate and mitigate the direct and indirect impacts on retained trees, that may arise as a result of the implementation of the layout proposal.

### **Arboricultural Method Statement for Protection of Trees during Construction.**

This is a statement which is used to describe how construction works can be carried out close to trees and how the above and below ground parts of the trees will be adequately protected during this process.

Works are carried out in accordance with British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and good arboricultural practice.

## 1. INTRODUCTION

**Client** : Mr A. Burrows. Regent Properties.  
**Report Ref** : Burr/AIA/14417  
**Site** : Riverside House. 2, Fitzalan Road, Arundel. BN18 9JS.

### 1.1 Instruction and Purpose of the Report.

Preparation of an Arboricultural report to include:

- Tree Survey.
- Arboricultural Impact Assessment.

### 1.2 Documents provided :

Mr Burrows provided the following drawings by JJR Designs Ltd dated 5-12-16:

- Proposed Site Plan. Drawing No : 110.
- Proposed Ground Floor Plan. Drawing No : 111.
- Proposed First Floor Plan. Drawing No : 112.
- Proposed Attic Floor Plan. Drawing No : 113.
- Proposed N-W & S-W Elevations. Drawing No : 117.
- Proposed S-E & N-E Elevations. Drawing No : 116.

### 1.3 Background Information.

- The client is agreeable to undertaking the necessary hand-dig site investigations at the proposed extension to the East, prior to an appeal decision, as maybe required.
- A telephone call to Arun District Council Planning department revealed that; there are trees subject to Tree Preservation Orders at the property 'Riverside House' and also the property to the East 'Martlet Court'. 'Martlet Court' also falls within Arundel Conservation area.

### 1.4 Scope of the report.

- The report is based on the site visit and the information provided.
- The work is undertaken in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.
- This report includes a preliminary Visual Tree Assessment (VTA) from ground level.
- No detailed investigations have been undertaken.
- All dimensions are estimated.
- This report is reliant on plans provided.

### 1.5 Limitations of use and copyright :

All rights within this report are reserved.

No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without the written permission of Arbortech (Consultancy).

Its content and format are for the exclusive use of the addressee in dealing with this site. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without the written consent of Arbortech (Consultancy).

### 1.6 About Us : Details provided in Appendix 5.

## 2 TREE SURVEY

### 2.1 Identification and location of the trees :

The trees are identified on the plan included at Appendix 2.

The plan should be read in conjunction with Appendix 4 'Tree Survey Notes'.

### **Tree observations:**

- 2.2 The trees were visually inspected and the information recorded on the 'Tree Survey Schedule' included as Appendix 1.

### 3 ARBORICULTURAL IMPACT ASSESSMENT

This Arboricultural Impact Assessment aims to identify, evaluate and mitigate the impacts upon existing trees that may arise as a result of the implementation of the layout proposal.

3.1 **Table 1 - Summary of the Impact of the proposed development**

| BS 5837 Tree Category | Tree Ref           | Possible impact in the absence of mitigation                                                                                          | Proposed Mitigation Measures in RPAs<br>In accordance with BS 5837 : 2012.                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category B            | T4, T5,<br>T6 & T7 | <ul style="list-style-type: none"> <li>- Root Severance/Disturbance/Damage in RPA.</li> <li>- Damage to aerial tree parts.</li> </ul> | Prior to construction. Installation of ; <ul style="list-style-type: none"> <li>- Tree Protection Barriers.</li> <li>- Temporary Ground Protection for use during construction.</li> </ul>                                                                                                                                                                                                                                                                             |
| Category C            | T1                 |                                                                                                                                       | Prior to construction. Installation of ; <ul style="list-style-type: none"> <li>- Temporary Ground Protection for use during construction.</li> <li>- Prior hand-dig site investigations at (flexible) pile positions.</li> </ul>                                                                                                                                                                                                                                      |
|                       | T1 & T2            |                                                                                                                                       | During construction; <ul style="list-style-type: none"> <li>- Use of low impact foundation. Mini pile and beam</li> <li>- Existing hard surface to remain in situ. Additional ground protection may be required in accordance with any proposed loadings i.e construction vehicles, material storage.</li> </ul>                                                                                                                                                       |
| Category C/U          | T3                 |                                                                                                                                       | Prior to construction. Installation of ; <ul style="list-style-type: none"> <li>- Temporary Ground Protection.</li> <li>- Prior hand-dig site investigations at 'flexible' pile positions.</li> </ul> During construction; <ul style="list-style-type: none"> <li>- Use of low impact foundation. Mini pile and beam</li> <li>- Existing hard surface to remain in situ. Additional ground protection may be required in accordance with proposed loadings.</li> </ul> |

3.2 Appendix 2 'Tree Constraints Plan' (indicating tree protection measures) sets out the proposed tree protection for this development project

#### 4 TREE CONSTRAINTS.

##### 4.1 Tree Root Protection Areas (RPAs).

The 'Root Protection Area' is the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as priority.

The tree Root Protection Area, as calculated in accordance with BS 5837 : 2012 is included at Appendix 1 'Tree Survey Schedule'.

##### 4.2 Table 2 : Root Protection Areas - Retained Trees.

| Tree Reference Number | Root Protection Area<br>Radius of a circle (m) centred on tree stem. |
|-----------------------|----------------------------------------------------------------------|
| T1                    | 8.3                                                                  |
| T2                    | 2.6                                                                  |
| T3                    | 2.2                                                                  |
| T4                    | 2.8                                                                  |
| T5                    | 4                                                                    |
| T6                    | 7                                                                    |
| T7                    | 2                                                                    |

##### 4.3 Crown proportions.

The crown proportions are stated in the 'Tree Survey Schedule' at Appendix 1. Some minor crown pruning may be required to T3 Box.

#### 5 LOW IMPACT FOUNDATION DESIGN.

##### 5.1 Foundation Design within T1, T2 & T3 RPA.

In consultation with a structural engineer; Mini pile and beam foundations are proposed. Mini piles are a versatile foundation solution for use within RPAs, as their position may be varied to avoid significant tree roots if found during prior hand-dig site investigations.

Screw piles are favoured due to their low vibration impact in RPAs upon installation and a low profile piling rig is also less likely to make contact with aerial crown portions.

Ground beams set at or above existing ground level and high level beams are proposed in order to leave the root system undisturbed by construction.

##### Additional construction notes :

- Existing ground levels within RPAs are to remain unchanged.
- Access by construction activity is prohibited within the unprotected RPAs.
- 'General Tree Protection Measures' apply.

## 6 SITE INVESTIGATIONS.

### **Prior Hand-dig Site Investigations within T1, T2 & T3 RPA at foundation footprint.**

**The client is agreeable to undertaking the necessary hand-dig site investigations, prior to an appeal decision, as maybe required.**

- 6.3 To evaluate any potential adverse impacts upon the trees by construction; Prior hand-dig site investigations are to be undertaken to determine the optimum pile positions within the RPAs whilst ensuring that significant tree roots are not damaged.
- 6.4 Site investigations will be undertaken in accordance with BS 5837 : 2012 at the proposed pile positions;
- Limited manual excavation within the RPA, using hand-held tools only.
  - Only '*Roots smaller than 25mm diameter may be pruned back*'.
  - With arboricultural supervision.

Additional detail is provided at Appendix 2 '*Tree Constraints Plan - indicating Tree Protection Measures*'.

## 7 PHYSICAL TREE PROTECTION MEASURES during construction.

### 7.1 Construction Exclusion Zone.

**BEFORE any machinery or materials are brought on to site and before commencement of any development, the following tree protection measures are to be implemented ;**

- Tree Protection Barriers.
  - Temporary Ground Protection.
- are to be installed to protect Root Protection Areas and aerial crown portions in accordance with BS 5837:2012 and this report.

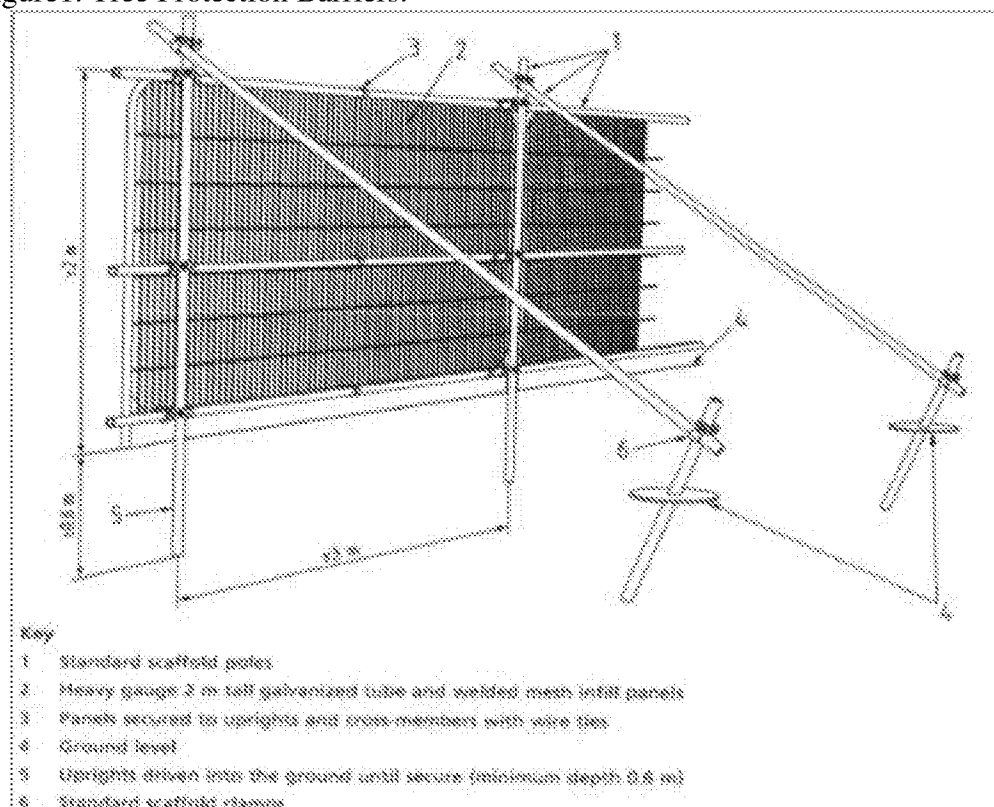
Measures for tree protection will be required prior to, during and post construction.

*"The protected areas should be regarded as sacrosanct, and once installed, barriers and ground protection should not be removed or altered without prior recommendation by the project arboriculturist and where necessary, approval from the local planning authority"( BS 5837:2012 Paragraph 6.2.1.3)*

The 'Tree Constraints Plan indicating proposed tree protection measures at Appendix 2, sets out the proposed tree protection for this development.

## 7.2 Tree Protection Barriers.

Figure1. Tree Protection Barriers.



## 7.3 Signage.

Waterproof signs are to be attached to the protective barriers stating clearly that the barrier is 'Tree Protection' and 'Not to be moved without authorisation'.

## 7.4 Temporary Ground Protection in RPAs.

Ground protection should be suitable for purpose and capable of supporting loads without being distorted or causing compaction of underlying soil within RPAs.

The existing hard surface within the RPAs of T1, T2 & T3 is to remain in situ. Additional ground protection may be required in accordance with proposed loadings. A structural engineer should be consulted.

Ground Protection may comprise one of the following;

a) *For pedestrian movements only.*

*A single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g 100mm depth of woodchip), laid onto a geotextile membrane.*

b) *For pedestrian operated plant up to a gross weight of 2 t.*

*Proprietary interlinked ground protection boards placed on top of a compression-resistant layer (e.g 150mm depth of woodchip), laid onto a geotextile membrane.*

*c) for wheeled or tracked construction traffic exceeding 2t gross weight. an alternative system( e.g proprietary systems or pre-cast concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

## 8 General Tree Protection Measures.

### 8.1 Root Protection Areas

The Root Protection Areas of retained trees should be regarded as sacrosanct. Access by construction activity is prohibited within the unprotected RPAs.

### 8.2 Soil Level Changes.

No machine excavation, soil stripping or site grading should be undertaken within RPAs to avoid root severance/disturbance. Existing ground levels within RPAs are to be retained.

### 8.3 Below ground services.

To avoid damage/disturbance to the tree root systems, installation of below ground services should ideally be routed outside Root Protection Areas. A hand-dig method with arboricultural supervision or trenchless technology will need to be employed if there is no alternative. Roots greater than 25mm diameter should remain in-tact.

### 8.4 Topography of the Site.

Care should be taken to avoid ‘run off’ from toxic fluids during construction, which may be harmful to trees i.e concrete mixings, diesel, oil.

### 8.5 Storage of construction materials

No construction materials or any material likely to be injurious to a tree i.e Oil, Bitumen, Cement (concrete mixing), should not be stacked or discharged within the Tree Root Protection Area or within 10m from a tree stem.

Allowance should be made for any slope of the ground, so that damaging materials cannot run towards the trees.

At no time should the Root Protection Area be breached for storage purposes.

### 8.6 Machinery/Equipment near tree canopy.

Great care should be exercised when using piling rigs, mobile cranes or similar equipment near the spread of the canopy of trees so as not to damage them in any way. The site supervisor should take responsibility for supervising the approach, exit and on site activities of delivery, muck-away vehicles and site machinery.

### 8.7 Fires

Fires should be avoided where possible. If not possible; they should not be lit in a position where their flames or heat can extend to foliage or branches. Size of fire and wind direction should be taken into account.

#### 8.8 Landscape operations and Management within RPAs.

- All landscaping will be undertaken sensitively by hand using hand-held tools only.
- Good quality topsoil may be used to level and fill hollows.
- Raising levels may be achieved by use of a granular material which remains gas and water permeable throughout its design life.

### 9 PHASING OF OPERATIONS

Tree protection on this site is to be undertaken in the following order :

| <b>PHASE 1 : PRIOR TO CONSTRUCTION</b><br><u>BEFORE any machinery or materials are brought on to site and before commencement of any development</u> |                                                                                                      |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>ORDER of ACTION</b>                                                                                                                               | <b>OPERATION</b>                                                                                     | <b>On site Arboricultural Supervision</b> |
| ACTION 1                                                                                                                                             | Undertake prior hand-dig site investigations.                                                        | ✓                                         |
| ACTION 2                                                                                                                                             | Undertake Tree Work (As permitted by LPA where applicable).                                          |                                           |
| ACTION 3                                                                                                                                             | Install Physical Tree Protection Measures ;<br>-Tree Protection Barriers<br>-Ground Protection.      |                                           |
| ACTION 4                                                                                                                                             | Arboriculturalist to check physical tree protection Measures as per TPP prior to construction phase. | ✓                                         |

| <b>PHASE 2 : DURING CONSTRUCTION</b><br>(Post 'main' construction) |                     |                                           |
|--------------------------------------------------------------------|---------------------|-------------------------------------------|
| <b>ORDER of ACTION</b>                                             | <b>OPERATION</b>    | <b>On site Arboricultural Supervision</b> |
| ACTION 5                                                           | - Piling operation. | ✓                                         |

| <b>PHASE 3 : POST CONSTRUCTION</b> |                                                               |                                           |
|------------------------------------|---------------------------------------------------------------|-------------------------------------------|
|                                    | <b>OPERATION</b>                                              | <b>On site Arboricultural Supervision</b> |
| ACTION 7                           | Tree Assessment.<br>Project arboriculturalist sign-off visit. | ✓                                         |

**'General Tree Protection Measures' should be adhered to throughout the development project.**

## **10 RECOMMENDATIONS.**

### **10.1 Building near trees :**

Foundations in proximity to trees (existing and removed) should be specified by a structural engineer taking into account the potential for volumetric changes of some soils and current guidance set out in National House Building Council Chapter 4.2 (Foundations) Building near trees.

Severance of tree roots has the potential to destabilise a tree.

### **10.2 Arboricultural Monitoring during construction.**

In accordance with BS 5837 : 2012 *Paragraph 6.3*; An auditable system of arboricultural site monitoring, including a schedule of specific site events should be implemented during the development project where tree protection measures are identified on the Tree Protection Plan, within or adjacent RPAs.

### **10.3 Tree Work Recommendations :**

Minor branch reduction may be required to T3 Box.

All pruning to be undertaken back to strong growth points.

#### **Timing of tree work.**

### **10.4 Works should be undertaken prior to commencement of construction.**

#### **Implementation of tree works :**

### **10.5 The contractor should carry out any tree works to BS 3998 *Recommendations for Tree Work* (2010).**

### **10.6 Future Considerations :**

Trees should be inspected on a regular basis by a qualified arboriculturist.

## **11 OTHER CONSIDERATIONS**

### **11.1 Trees subject to statutory controls :**

Consultation with the local planning authority will be required prior to any pruning works to trees covered by a tree preservation order or located in a conservation area.

### **11.2 Risk**

The Occupiers Liability Act 1957 & 1984 places a “common duty of care” upon the owner occupier of a site to take reasonable steps to minimise the risk of personal injury or damage to property arising from any tree on that site.

### 11.3 **Wildlife.**

Your attention is drawn to the wildlife and Countryside Act 1981 (as amended) and related legislation which provides statutory protection for nesting birds and bats including roosting sites, some mammals, invertebrate species and plants.

It would be prudent to undertake a Bat survey prior to carrying out any works to trees with significant cavities and to avoid works at times when birds are likely to be nesting.

### 11.4 **Trees outside the property.**

Trees located in adjacent properties are effectively out of the control of the owners of this site. By common law, branches from trees on adjacent properties extending over boundaries can be pruned back to the boundary line without the permission of the owners. However, the material belongs to the tree owner and the same guidance on statutory controls apply.

## 12 **BIBLIOGRAPHY / REFERENCES**

British Standard 5837 '*Trees in relation to design, demolition and construction - Recommendations*' : 2012.

British Standard 3998 '*Recommendations for Tree Work*' (2010)

Conservation of Habitats and Species Regulations (2010).

Occupiers Liability Act 1957 & 1984.

Town & Country Planning Act 1990.

Wildlife & Countryside Act 1981 (As amended)

# APPENDIX 1

## Tree Survey Schedule

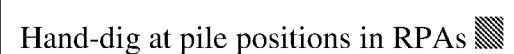
To be read in conjunction with Appendix 3 'Tree Survey Notes'

| Tree No                                                                                                                                                                                                                                      | Species                             | Height<br>(m) | Diameter (mm)<br>as BS 5837<br>Annex C | Branch<br>spread              | Height above ground(m) |           | Age<br>Class | Structural | Physiological | Category | RPA<br>radius in<br>metres |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------|----------------------------------------|-------------------------------|------------------------|-----------|--------------|------------|---------------|----------|----------------------------|
|                                                                                                                                                                                                                                              |                                     |               |                                        |                               | 1 <sup>st</sup> branch | Canopy    |              |            |               |          |                            |
| T 1                                                                                                                                                                                                                                          | Macrocarpa                          | 17            | 690                                    | N 7<br>S 7<br>E 6.5<br>W 6    | 5.5<br>North West      | 4.5       | M            | Fair       | Fair          | C2       | 8.3                        |
| <b>Notes :</b> Main stem bifurcates at 3.5m – Sub-dominant stem to East.<br>Previously 'topped' with significant deadwood stubs in upper crown.<br>Crown suppressed with dieback to South West.<br>Remaining crown beginning to over-extend. |                                     |               |                                        |                               |                        |           |              |            |               |          |                            |
| T 2                                                                                                                                                                                                                                          | Variegated Holly<br><i>Ilex spp</i> | 7             | 215                                    | N 1.5<br>S 2<br>E 2<br>W 0.75 | 2<br>North             | 1<br>East | SM           | Fair       | Fair          | C        | 2.6                        |
| <b>Notes :</b> 2 stems arising from ground level – Sub-dominant stem to South.<br>Crown growing into canopy of Macrocarpa.                                                                                                                   |                                     |               |                                        |                               |                        |           |              |            |               |          |                            |
| T 3                                                                                                                                                                                                                                          | Box                                 |               | 184                                    | N 1.2<br>S 2<br>E 1<br>W      | 3<br>East -West        | 4         | M            | Fair/Poor  | Poor          | C/U      | 2.2                        |
| <b>Notes :</b> Main stem bifurcates at 500mm. Large 'flush' cut wound with tear at 300mm.<br>Stems lean to South.<br>Minor deadwood in crown.                                                                                                |                                     |               |                                        |                               |                        |           |              |            |               |          |                            |

| Tree No                                                                                                                                                                                                                                                                                                                       | Species                                          | Height<br>(m) | Diameter (mm)<br>as BS 5837<br>Annex C | Branch<br>spread           | Height above ground(m) |        | Age<br>Class | Structural | Physiological | Category | RPA<br>radius in<br>metres |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------|----------------------------------------|----------------------------|------------------------|--------|--------------|------------|---------------|----------|----------------------------|
|                                                                                                                                                                                                                                                                                                                               |                                                  |               |                                        |                            | 1 <sup>st</sup> branch | Canopy |              |            |               |          |                            |
| T 4                                                                                                                                                                                                                                                                                                                           | Ash<br><i>Fraxinus excelsior</i>                 | 9             | 230                                    | N 1.5<br>S 2<br>E 3<br>W   | 3.2<br>West            | 4      | SM           | Good       | Good          | B2       | 2.8                        |
| <b>Notes :</b> Multi-stemmed from 3m.<br>Previously heavily crown reduced.<br>Epicormic growth throughout crown.                                                                                                                                                                                                              |                                                  |               |                                        |                            |                        |        |              |            |               |          |                            |
| T 5                                                                                                                                                                                                                                                                                                                           | Sycamore<br><i>Acer pseudoplatanus</i>           | 11            | 330                                    | N 2<br>S 2.5<br>E 1.5<br>W | 5<br>South<br>West     | 5-6    | SM           | Good       | Good          | B2       | 4                          |
| <b>Notes :</b> Single upright stem.<br>Previously heavily crown reduced.<br>Epicormic growth throughout crown.<br>Tight compression union in mid crown.                                                                                                                                                                       |                                                  |               |                                        |                            |                        |        |              |            |               |          |                            |
| T 6                                                                                                                                                                                                                                                                                                                           | Horse Chestnut<br><i>Aesculus hippocastanum.</i> | 10.5          | 580                                    | N 5<br>S 4.5<br>E 4<br>W 5 | 2                      | 4      | M            | Fair/Poor  | Fair          | B2       | 7                          |
| <b>Notes :</b> Single stem with some basal growth.<br>Wound with bark necrosis, extending from 2m to 3.5m. Callus growth evident.<br>Scar surrounds union of lowest branch to West.<br>Pruning wound with decay at 3m to South West.<br>Fissure/crack in stem/branch extending from at 4m to 6m.<br>Previously crown reduced. |                                                  |               |                                        |                            |                        |        |              |            |               |          |                            |

| Tree No | Species                         | Height<br>(m) | Diameter (mm)<br>as BS 5837<br>Annex C | Branch<br>spread         | Height above ground(m) |        | Age<br>Class | Structural | Physiological | Category | RPA<br>radius in<br>metres |
|---------|---------------------------------|---------------|----------------------------------------|--------------------------|------------------------|--------|--------------|------------|---------------|----------|----------------------------|
|         |                                 |               |                                        |                          | 1 <sup>st</sup> branch | Canopy |              |            |               |          |                            |
| T 7     | Holly<br><i>Ilex aquifolium</i> | 6             | 170                                    | N 2<br>S 1.5<br>E<br>W 2 |                        | 0      | SM           | Good       | Good          | B2       | 2                          |
| Notes : |                                 |               |                                        |                          |                        |        |              |            |               |          |                            |

**Tree Constraints Plan** indicating proposed tree protection measures.  
*To be read in conjunction with Appendix 3 'Tree Survey Notes'.*



## APPENDIX 3

### METHOD STATEMENT

#### **Prior Hand-dig Site Investigations** within Tree Root Protection Areas (RPAs).

**Site : Riverside House. 2, Fitzalan Road, Arundel. BN18 9JS.**

**Development Proposal :** Mini pile and beam foundation to support proposed extension to East of property within RPAs of T1, T2 & T3..

**Purpose of task :** To explore positions for insertion of mini pile foundations within the RPAs of the trees without causing root damage which may be detrimental to tree health or stability.

**Trial pit dimensions :** Approx W400mm x W400mm x D600mm minimum, *with flexibility to extend pit to either side, if necessary, to avoid significant roots.*

**Trees Location :** The location of the trees together with Root Protection Area dimensions are plotted on plan included at Appendix 2 of this report.

**Author :** Mrs J.A Hayes

|                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>When work will be undertaken.</b>                                                                                                                                                                                                                                                                                                                             |
| To be confirmed.                                                                                                                                                                                                                                                                                                                                                 |
| <b>Who will do work.</b><br>1 x Surveyor/Labourer.<br>1 x Labourer.<br>1 x Arboricultural Supervisor (Mrs J.A Hayes).                                                                                                                                                                                                                                            |
| <b>What Equipment will be used.</b><br>Hand tools (only) : Spade, Fork, Pick, Dry hessian, Handsaw.<br>Trowel to be used for hand digging around roots <i>to limit the potential risk of bark damage if roots are encountered, particularly in relation to trial pits that are close to the base of trees or as instructed by the arboricultural supervisor.</i> |

**How work will proceed :**

Works will be undertaken in accordance with recommendations set out in British Standard 5837:2012.

No machine excavation, levelling or grading will be undertaken within the Root Protection Area.

**Method of works :**

- The extent of the tree Root Protection Area to be marked out on the ground.
- Careful excavation will be undertaken by hand-digging only, using the above hand-digging tools as appropriate for the task, to a depth of 600mm minimum below existing soil level taking account of the following :
- Damage will be avoided to the protective bark covering larger roots.
- Roots smaller than 25mm diameter may be cleanly pruned back to side branches using a handsaw.
- Dessiccation of roots will be avoided by wrapping them in clean dry hessian, if exposed.

**Arboricultural Supervision :**

- Site investigations will be supervised by the Arboricultural Supervisor during the hand-dig operation.
- Significant tree root and soil information will be recorded.

**Closure of trial pits :**

- Any hessian wrapping will be removed prior to closure.
- Retained roots will be surrounded with sharp sand or good quality top soil before soil is replaced.

**Task Specific Conditions/Arrangements :**

- Surveyor/Labourers will undertake a risk assessment prior to commencement of hand-dig and review as appropriate. Particular attention should be given to the possible presence of underground services, in particular those that have the potential to cause harm.
- Ground and weather conditions will be assessed as suitable prior to commencement i.e not during extremes of wet or dry conditions.
- Efforts will be made to limit ground compaction by use of pedestrian ground protection as required.

**Signed (prior to commencement of hand dig) :**

Arboricultural Supervisor (Mrs J.A Hayes) :

Surveyor/Labourer 1.

Labourer 2.

Date :

## APPENDIX 4. Tree Survey Notes

### GENERAL TREE SURVEY NOTES.

- Tree species has been determined (common name and scientific)
- All tree dimensions are estimated, height and spread being measured in metres and trunk diameter measured at 1.5m above ground level or if more than one stem, an average stem diameter is stated.
- The tree age classification is made in terms of the trees site specific maturity within the landscape.

Age groups are indicated as

|     |                    |
|-----|--------------------|
| J   | - Juvenile tree    |
| SM  | - Semi-mature tree |
| EM  | - Early mature     |
| M   | - Mature tree      |
| OM  | - Over mature      |
| Vet | - Veteen           |
| Anc | - Ancient          |

### ASSESSMENT AND CATEGORY CLASSIFICATION.

The condition of trees included in the survey has been assessed by a person being qualified and experienced in arboriculture. In making the assessment particular consideration has been given to :

- Tree species.
- Tree dimensions.
- Health, Age and Vigour of tree.
- Tree conformation including any structural defects.
- The location of the tree, relative to the existing site and surroundings.
- The landscape and environmental/habitat value.

On the basis of this individual assessment, the trees (existing) are classified into one of the following categories, or intermediate categories

- |   |         |                                                                            |
|---|---------|----------------------------------------------------------------------------|
| A | (GREEN) | Trees of high quality.                                                     |
| B | (BLUE)  | Trees of moderate quality.                                                 |
| C | (GREY)  | Trees of low quality in adequate condition until new planting established. |
| U | (RED)   | Trees in current context cannot realistically be retained.                 |

In addition, the above categories may be attributed one or more of the following criteria :

- 1 Arboricultural values.
- 2 Landscape values.
- 3 Cultural values including Conservation.

## APPENDIX 5 – ABOUT US....

### **We specialise in all tree-related matters :**

- ✓ Development/Planning-BS5837:2012,
- ✓ Planning Services-Tree Preservation Orders & Conservation Areas,
- ✓ Tree Hazard Evaluation,
- ✓ Woodland Management etc

### **We have 25 years experience in the arboricultural industry.**

We aim to keep at the forefront of arboriculture; through ongoing review, training and development programmes.

### **Arboricultural Consultant : Mr J.R Hayes. Tech.Cert.(Arbor.A).**

Technicians Certificate in Arboriculture 1998.  
City & Guilds Tree Surgery for Craftsmen 1990.

### **Arboricultural Surveyor : Mrs J.A Hayes.**

Lantra Professional Tree Inspection Award 2006  
Studying Diploma in Arboriculture Level 4.  
Registered Natural England Class Survey Licence Holder :  
Bat Conservation Level 1 : CLS002485  
Bat Survey Science & Education Level 2 : CLS02485

### **Member of :**

The Arboricultural Association.  
Chartered Institute of Ecology and Environmental Management.

### **Arboricultural Consultants to :**

Chichester Cathedral.  
Chichester City Council  
Chichester District Council  
Goodwood Estate.  
Halburn Ecological Consultants.  
London Biggin Hill Airport.  
Mansell Construction.  
John Mowlem & Company PLC.....

*References supplied upon request.*

### **Insurance cover :**

|                        |            |
|------------------------|------------|
| Employers liability    | 10,000,000 |
| Public liability       | 5,000,000  |
| Professional indemnity | 1,000,000  |

*Copy supplied upon request*

## TERMS OF ENGAGEMENT.

1. Any report is provided for the sole use of the named Client and is confidential to the Client and his professional advisors. The Consultant accepts responsibility to the Client alone for the stated purposes of the report. No responsibility whatsoever is accepted to any person other than the Client himself. Any other such person relies upon the report at entirely his own risk. Neither the whole nor any part of the report or any reference thereto may be reproduced or transmitted, in any form or by any means, nor sold, hired or divulged to any third party without the Consultants prior written approval.
2. The content of any information supplied to the consultant by the client, including such items as reports, plans diagrams letters, data etc will be deemed to be true and accurate and such items will not be investigated or checked for their validity. Any information supplied subsequently found to be inaccurate, misleading or false may render the contents of the report invalid.
3. The report remains the property of the Consultant until payment has been received in full. The Client shall pay the Consultant his fee regardless of any outcome. In addition the Client will reimburse the Consultant the cost of all reasonable out of pocket expenses which he may incur. Payment in full of the total amount due must be made within 14 days and the Consultant shall be entitled to charge interest both before and after any judgement on the amount unpaid, at the rates listed below (delayed payment surcharge) per month (30 days) from time to time, until payment in full is made (a part of a month being treated as a full month for the purpose of calculating interest). No discount nor retention or set off against the same due is allowed unless agreed previously by the Consultant in writing.  
DELAYED PAYMENT SURCHARGE.  
Accounts not settled within the 14 day period will be surcharged as follows :  
2.5% for payment within 1 month.  
5% for payment within 2 months.  
10% for payment within 3 months (maximum time limit)  
Surcharges are not an offer of extended credit.
4. The consultant reserves the right to charge the client for a proportion of the services undertaken, should the client, further to instructions, cancel the agreed commissioned services.
5. Any information in relation to the tree(s) survey/inspection must be provided at the time of the survey/inspection process, prior to the compilation of the report document. Any information received by the consultant after this time will not have been considered and an additional re-assessment of the trees may be necessary at the clients expense.
6. In making the report, the following assumptions will be made by the Consultant ( and these are therefore matters for which no responsibility can be accepted by the Consultant);
  - (i) that there are not underground pipes, wires, cables, or other services or installations which might be damaged as a result of work recommended or necessary.
  - (ii) that no tree(s) is the subject of or protected by a Tree Preservation Order or the terms of a planning consent (unless stated), in relation to which the Client must make his own enquiries of the Planning Department responsible.
7. It is possible that the report will suggest further investigation works to be carried out by a specialist firm or person eg. Structural Engineer, Surveyor, drain or electrical engineer or other. On no account will liability be accepted by the Consultant in respect of matters on which the client is recommended to obtain such other specialist advice or if the Client proceeds or acts without obtaining and acting upon the relevant further advice.
8. The report will not purport to express an opinion about or to advise upon the condition of un-inspected parts of the land or tree(s) and should not be taken as making any implied representation or statements about such parts.
9. Preliminary surveys are visual inspections which do not include any information on engineering, no root or soil samples are taken for analysis and trees are not climbed (unless stated).
10. The Consultant will inspect as much of the land and tree(s) as is practicable given the scope of his instructions and the level of fee agreed. He will be under no obligation to inspect those areas that are unexposed or not readily accessible.
11. The tree survey and inspection process requires good, clear access to the trees being inspected. Any obstructions will limit the inspection process and will be noted within the survey / inspection assessment. The removal of any obstructions such as dense undergrowth, climbing plants etc will not be undertaken as part of the process, unless this additional operation has been previously agreed with the client.
12. The statements made in this report do not take account of the effects of extreme climate, vandalism or accident whether physical, chemical or fire. We cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct or professional manner in accordance with current good practice. The authority of this report ceases at any stated time limit within it, or if none stated after 1 year from the date of the survey or when any site conditions change, or pruning or other works unspecified in the report are carried out to, or affecting the subject tree(s), whichever is the sooner.
13. Any trees referred to in this report should be re-inspected further to storms or extreme weather conditions due to the potential for deterioration in tree condition/situation.
14. All trees referred to in this report are assessed in the situation and site usage as seen on the day of inspection.  
The client should inform the consultant of any foreseeable changes/variations prior to the site visit.
15. Any verbal information given by the Consultant prior to the Clients receipt of the written report shall not be construed as a representation or warranty and should not be relied or acted upon.
16. Any claim by the Client which is based on any defect in the nature or quality of the Consultants services shall be notified to the Consultant within 7 days from the date of supply.
17. Except in respect of death or personal injury caused by the Consultants negligence, the Consultant shall not be liable to the Client by reason of any representation, or implied warranty, condition or other term, or any duty at common law, or under the express terms of any contract, for any consequential loss or damage (whether for loss of profit or otherwise), costs, expenses or other claims for consequential compensation whatsoever ( and whether caused by the negligence of the Consultant his employees or agents or otherwise) which arise out of or in connection with the Consultant's services, except as expressly provided in these conditions.
18. The Consultant shall not be liable to the Client or be deemed to be in breach of the contract by reason of any delay in performing, or any failure to perform any of the Consultants obligations in relation to the services he renders.
19. The identification of fungi, insects or tree disorders are based on field observations and do not include a laboratory analysis (unless requested).
20. The contract between the Client and the Consultant shall be governed by the laws of England.