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**Tree Survey
Arboricultural Impact Assessment**

Trees at

2, St Christopher Road, Havant. PO9 3TP.

Prepared for
Mr K. Lambe
March 2012

ARBORTECH (Consultancy)

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

Tel/Fax 01243 574544

E mail : arbortechconsultancy@vodafoneemail.co.uk



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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 5837:2005 *Trees in relation to construction – Recommendations* and good arboricultural practice.

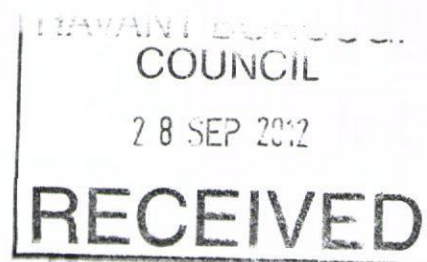
1. INTRODUCTION

Client : Mr K. Lambe.

Report Ref : Lamb/ATAIA/20312

Site : 2, St Christopher Road, Havant. PO9 3TP.

Date : 20th March 2012



1.1 Instruction and Purpose of the Report.

I am instructed to prepare an Arboricultural report (in accordance with BS 5837) to include:

- Tree Survey.
- Arboricultural Impact Assessment.

1.2 Documents provided.

Stephen Bromley Associates provided the following :

- Drawing No 9462/1 - Existing and proposed site layout and elevations.

1.3 Relevant background information :

- The tree concerned is in ownership of the County Council (highways department).

1.4 Scope of the report.

- The report is based on the site visit and the information provided, listed in 1.2 and 1.3 above.
- The work is undertaken in accordance with BS 5837:2005 *Trees in relation to construction*.
- This report includes a preliminary Visual Tree Assessment (VTA) from ground level.
- All dimensions are estimated.
- No detailed investigations have been undertaken.
- This report is reliant on the plans provided.

1.5 Limitations of use and copyright : As set out in the terms of engagement provided.

1.6 Qualifications and experience : Details provided in Appendix 5.

2 TREE SURVEY

2.1 Identification and location of the trees :

The tree can be identified on the '*Tree Survey Plan*' at Appendix 2.

Appendix 2 should be read in conjunction with Appendix 4 '*Tree Survey Notes*

2.2 Tree observations: The tree was visually inspected and the information recorded on the '*Tree Survey Schedule*' included as Appendix 1.

3 ARBORICULTURAL IMPACT ASSESSMENT

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

3.1 Summary of the Impact of the proposed development.

Tree Retention.

The highway tree (T1) is to be retained and protected in accordance with BS 5837:2005
'Trees in relation to construction'

4 TREE PROTECTION.

4.1 Protection of trees during development - General.

To prevent physical damage to the rooting environment or aerial portions of the retained tree during construction activities; the retained tree will need to have measures put in place for its protection prior to, during and post construction phases of development.

4.2 Tree Root Protection Area (RPA).

The Root Protection Area has been calculated for this tree (T1) in accordance with BS 5837:2005, in order to avoid damage to the roots and the rooting environment. The RPA indicates the minimum area in m2 which is required for the functional rooting and stability of the retained tree.

Tree Ref No	Tree Root Protection Area Dimensions (metres)	Offset Applied?	Tree located on site?
T1	A 'square' RPA: North - 3.55 South - 3.55 East - 2.84 West - 4.26	Yes 20% to West	No

Table 1 : Root Protection Area Dimensions – Tree to be retained.

The majority of the rooting environment of this tree is covered by an impermeable surface i.e Tarmac. However, the tree appears to be in good physiological condition and does not seem adversely affected by this.

It is likely that the tree has benefited from the permeable area of ground to the West (within the boundaries of No 2) for the purposes of aqueous and gaseous filtration, to aid healthy tree function.

It is therefore proposed that this existing area of permeable RPA remain unchanged. An offset of the RPA by 20% has been applied to the West in favour of the tree, to allow for the continued availability of this permeable area within the tree rooting environment.

Please refer to the 'Tree Constraints Plan' at Appendix 3 for site specific detail.

4.3 **Crown proportions.**

The crown proportions are stated in the '*Tree Survey Schedule*' at Appendix 1.
Also see Tree Work Recommendations at Section 5.1.

4.4 **'Construction Exclusion Zone' (CEZ).**

It will be necessary to establish a 'Construction Exclusion Zone' to prevent physical damage to the retained tree or disturbance/compaction within the rooting environment. Measures for tree protection will be required prior to during and post construction phase.

The proposed 'Construction Exclusion Zone' for this site is indicated on the '*Tree Constraints Plan*' at Appendix 3. It is an area which encompasses the Root Protection Area (Table 1) and the crown proportions (Appendix 1) of tree T1.

The proposed boundary fence to North should be erected on site prior to commencement of any development to prevent construction access into the RPA

No construction activities are permitted within the 'Construction Exclusion Zone'.

Construction Site Access .

All construction site activities, including delivery vehicles entering or leaving the site must do so using an alternative access point 'outside the Construction Exclusion Zone' (CEZ).

All associated construction vehicles should enter and exit the site using the 'alternative access point'. In addition all vehicles should approach and leave the site via St Christopher Road to avoid any inadvertent contact with the tree T1 which stands adjacent Ernest Road.

The site supervisor should take responsibility for supervising the approach, exit and on site activities of delivery, muck-away vehicles and site machinery to ensure that the CEZ is not breached.

4.5 **Construction of the new Vehicular Access (to South of the existing access).**

The proposed new access is located outside the Root Protection Area and crown spread (South) of tree T1. Therefore no damage is envisaged to this tree providing that the Construction Exclusion Zone is adhered to throughout the development process.

4.6 **Hard surfacing within the RPA.**

On Highway land.

The existing tarmac surface on highway land is to remain undisturbed within the RPA.

For existing unit parking.

The existing concrete surface for the purposes of the existing unit parking, is to remain undisturbed within the RPA.

If an extension of the existing hard surface is required i.e to North of existing, upon the currently undisturbed area of soil on site; this would need to incorporate a 'bed' of soil or permeable surface within the RPA as shown on the Tree Constraints Plan. This will allow for the filtration of water and gaseous diffusion within the RPA to sustain the tree, as existing.

4.7 **General Protection Measures.**

Utility Services.

No services are to be routed through the RPA.

Soil Level Changes.

No machine excavation, soil stripping or site grading should be undertaken within the RPA to avoid root severance/disturbance.

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.

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.

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.

Fires

Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches or trunk. Size of fire and wind direction should be taken into account.

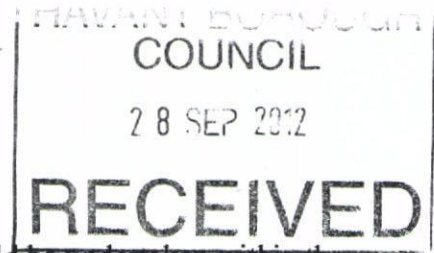
5 **RECOMMENDATIONS.**

5.1 **Tree Work Recommendations :**

- T1 : Lift tree crown to South to allow 3.5m ground clearance.

Reason : To allow clear passage of vehicles beneath, to enter and exit the 'existing' site.

Consent for tree work should be sought from the tree owner prior to commencement.



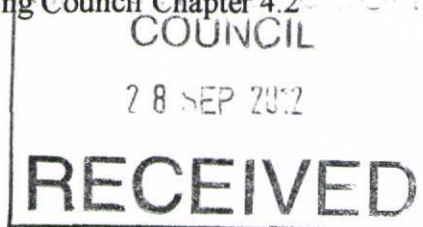
5.2 **Implementation of tree works :** The contractor should carry out all tree works to BS 3998 *Tree Work Recommendations* (2010).

5.3 **Future Considerations :**

All trees should be inspected on a regular basis by a qualified arboriculturist.

5.4 **Building near trees :**

Foundations in proximity to trees should be specified by a structural engineer taking into account the current guidance set out in National House Building Council Chapter 4.2 (Foundations) Building near trees.



6 **OTHER CONSIDERATIONS**

6.1 **Trees subject to statutory controls :**

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

6.2 **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.

6.3 **Wildlife.**

Your attention is drawn to the wildlife and Countryside Act 1981 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.

6.4 **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.

7 **BIBLIOGRAPHY / REFERENCES**

British Standard 5837 *'Trees in relation to construction - Recommendations'* : 2005.

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)

CRoW Act 2000

APPENDIX 1
Tree Survey Schedule

To be read in conjunction with 'Tree Survey Notes'



Tree Reference No	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)	Height of crown clearance (m)	Age Class	Physiological Condition	Structural Condition	Estimated remaining contribution (years)	Category Grading
T 1	Pissards Plum <i>Prunus cerasifera</i>	7	350	N 4.5 S 3.5 E 4 W 3.5	2	M	Good	Good	10	C

Observations :

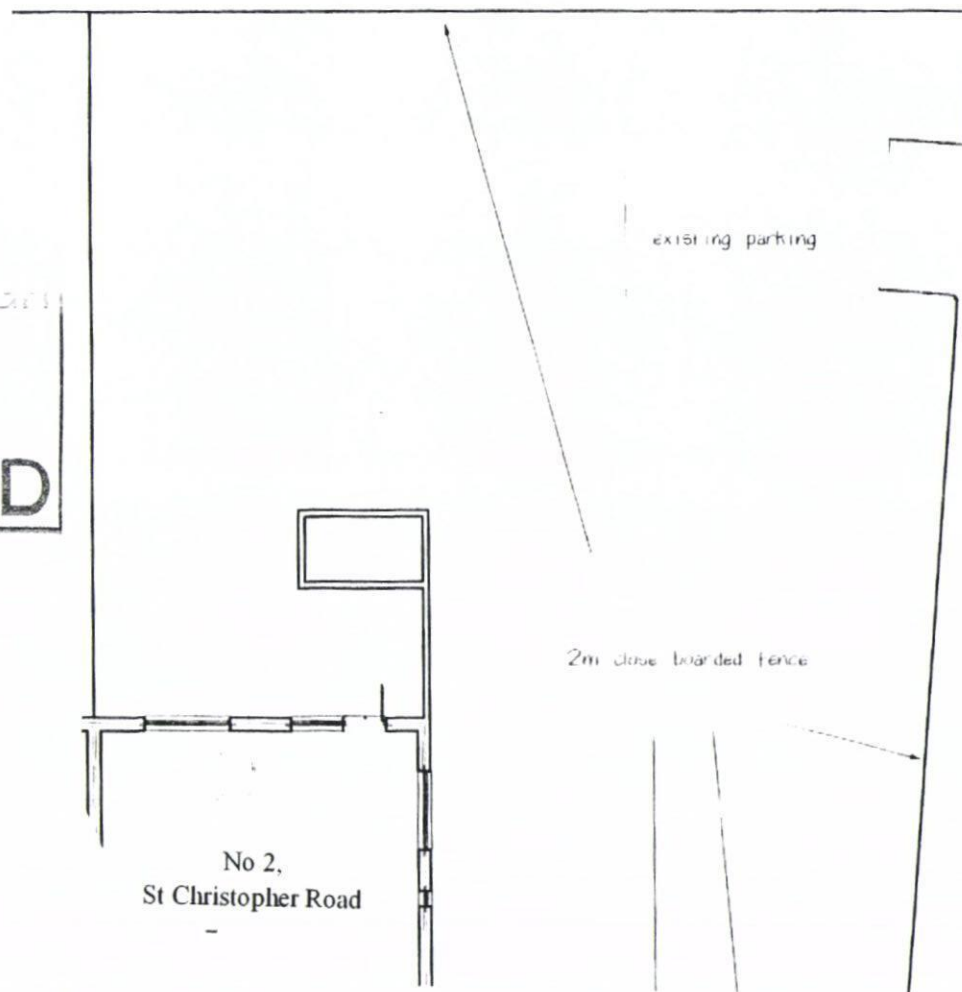
- Single stem with slight lean to North.
- Mechanical damage evident around circumference of base.
- Some basal growth to South.
- Crown break at 2m, multi-branching at this point with dominant branch to South East.
- Minor deadwood in crown.

APPENDIX 2

Tree Survey Plan

To be read in conjunction with 'Tree Survey Notes'.

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●T10 Ernest Road



APPENDIX 3

Tree Constraints Plan

To be read in conjunction with 'Tree Survey Notes'

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Red Broken line indicates position of permanent
soul fencing to avoid access into the 'permeable'
area of the RPA.

Brown continuous line indicates proposed boundary
fence. This should be erected prior to commencement of
any development on site, to prevent construction access



T1C
Root Protection Area (RPA)
(Radius in metres).

North = 3.55m
South = 3.55m
East = 2.84m
West = 4.26m

RPA offset by 20% to West in
favour of T1C

ROOT PROTECTION AREA
= CONSTRUCTION
EXCLUSION ZONE

**RETENTION of
existing permeable
rooting environment.**

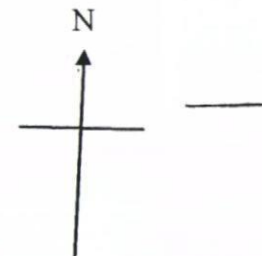
2m close boarded fence

parking new unit

Existing fences to remain the same
except as shown

Ernest Road

Construction Site Access
outside
'Construction Exclusion Zone'
Approach/Exit via St Christopher
Road



APPENDIX 4. Tree Survey Notes

GENERAL TREE SURVEY NOTES.

- The pre-development site survey is based on guidelines set out in British Standard 5837 : 2005 and good arboricultural practice.
- 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.
- 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
M	- Mature tree
OM	- Over mature

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 are classified into one of the following categories, or intermediate categories (A, B & C indicated in colour on the Tree Constraints Plan as a continuous line and R indicated in colour as a broken line).

- | | | |
|---|---------|--|
| A | (GREEN) | Trees of high quality and value making/to make a sustainable contribution. |
| B | (BLUE) | Trees of moderate quality and value making/to make a significant contribution. |
| C | (GREY) | Trees of low quality in adequate condition until new planting established. |
| R | (RED) | In current context could be removed. |

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.

A Tree Survey is primarily a data collection exercise and assessment of general tree condition at the time of surveying. It consists of a visual tree assessment from ground level. It should highlight any obviously visible signs of ill health or major defects. It is not an individual tree inspection or schedule of works, but should act as a guide for work which might be undertaken.

APPENDIX 5

QUALIFICATIONS and EXPERIENCE.



Arboricultural Consultant : Mr JR Hayes. Tech.Cert.(Arbor.A).
Technicians Certificate in Arboriculture 1998.
City & Guilds Tree Surgery for Craftsmen 1990.

Arboricultural Surveyor : Mrs JA Hayes.
Lantra Professional Tree Inspection Award 2.
Natural England Bat Worker
Science, Education & Conservation Licence. Licence No : 20111630

Arboricultural Consultant to :

Bedales School
Chichester Cathedral.
Chichester City Council
Chichester District Council
Douglas Briggs Partnership Architects, Urban Designers, Planners.
Halburn Ecological Consultants.
Mansell Construction.
John Mowlem & Company PLC.....

Members of :

The Arboricultural Association.
Bat Conservation Trust

Continuing Professional Development :

We are informed of up-dated techniques in Arboriculture and regularly attend training courses to further our professional development.

Insurance cover :

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

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.



ARBORTECH (Consultancy)

ARBORICULTURAL ADVISORY

TEL : 01243 571641

E mail : arborconsultancy@vodafontemail.co.uk

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

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