

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

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

4 Trees at

'Land North of Summer Lane'.
Nyetimber, Bognor Regis.

Prepared for
Hanbury Properties
May 2015

ARBORTECH (Consultancy)

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

Tel/Fax 01243 574544

E mail: arbortechconsultancy@vodafoneemail.co.uk

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 : Hanbury Properties.

Report Ref : Hanb/Rep/6515

Site : 'Land North of Summer Lane', Nyetimber. Bognor Regis.

1.1 Instruction and Purpose of the Report.

Preparation of an Arboricultural report to include :

1 x Ash tree subject of TPO/P/1/15 (2015).

2 x Poplar trees subject of TPO/P/2/15 (2015).

1 x Oak tree.

- Tree Survey

- Arboricultural Impact Assessment.

in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*.

1.2 Documents provided :

- TPO documents for TPO/P/1/2015 and TPO/P/2/15 (2015).

- Sketch illustrative layout SK09. By Davies Landscape Architects. April 2015.

1.3 Scope of the report.

- The report is based on the site visits and the information provided.
- Access to the trees was not possible due to them being located on private land or within dense undergrowth. Visibility was only possible from outside of the sites or at a distance from the trees.
- The development layout takes account of the trees to ensure that structures are located outside the RPAs.
- This report includes a limited preliminary Visual Tree Assessment (VTA) from ground.
- No detailed investigations have been undertaken.
- All dimensions are estimated.
- This report is reliant on plans provided.
- The impact assessment assumes that the drainage ditches to the North and North East of the site are to remain undisturbed by the development proposal.

Limitations of use and copyright :

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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).

- 1.5 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).

2 TREE SURVEY

Identification and location of the trees :

- 2.1 The trees are identified on the '*Proposed site layout plan indicating tree locations and indicative Root Protection Areas*'. included at Appendix 2. This plan should be read in conjunction with Appendix 3 '*Tree Survey Notes*'.

Tree observations:

- 2.3 The trees were subject of a limited visual inspection and the information is recorded on the 'Tree Survey Schedule' included as Appendix 1.

3 ARBORICULTURAL IMPACT ASSESSMENT.

Tree Root Protection Areas (RPAs).

- 3.1 The 'Root Protection Area' (RPA) 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.
- 3.2 RPA dimensions are calculated on individual tree stem diameters at 1.5m above ground. As access to the trees was not possible, the stem dimensions for T1 and T2 are unknown and T3 and T4 were estimated from a distance from within the boundaries of 'Land North of Summer Lane'.
- 3.3 To illustrate the potential impacts of development upon trees, the maximum RPA dimension in accordance with BS 5837 has been utilised for T1 and T2 at Appendix 2 'Proposed site layout plan indicating tree location and indicative Root Protection Areas'. This is capped at a 15m radius. The RPA dimensions for T3 and T4 were calculated on the estimated stem diameters.

3.4 Table 2 : Root Protection Area - Retained Trees.

Tree Reference Number	Root Protection Area Radius of a circle (m) centred on tree stem.
T1	Unknown (Indicative RPAs at Appendix 2 utilise the maximum radius = 15m)
T2	Unknown (Indicative RPAs at Appendix 2 utilise the maximum radius = 15m)
T3	5.4
T4	11.4

- 3.5 The indicative positions of the maximum default RPAs (15m) of T1 and T2 suggest that the RPAs are located off site within neighbouring land. See Appendix 2.
- 3.6 In addition, trees T1-T3 are located on the opposite side of a deep drainage ditch located to South of T1 & T2 and to West of T3 and T4 appears to originate from within the ditch. Drainage ditches deflect roots of adjacent trees downwards and due to the presence of the 'void' and can only allow root formation at depth. In addition the ditch provides a ready source of water without the need for the root system to search beyond.
- 3.7 The British Standard (Paragraph 4.6.2) states that "where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced and modifications to the shape of the RPA (Root Protection Area) should reflect a soundly based arboricultural assessment of likely root distribution". The standard elaborates that this should take account of root morphology when influenced by existing site conditions e.g topography and drainage etc.

- 3.8 This assessment suggests that the root system of T3 is most likely to be asymmetric and deflected to depth beneath the existing ditch. Therefore the presence of significant roots on this site is unlikely, notwithstanding that this area adjacent the tree is proposed for green space and not for construction.

Crown proportions.

- 3.9 The crown proportions of T1 and T2 are confined well within their indicative RPAs (15m) on neighbouring land (See Appendix 2). The proposed green space to the North East of this site allows for maximum growth potential of T3 without impact on any built structures. The crown proportions of T4 are confined within its RPA.

Conclusion.

- 3.10 The above assessment and recommendations identify that the development proposal;
- Is unlikely to impact on trees T1 - T4.
 - That the trees and the proposed development may co-exist without detriment to the trees in the long-term.
 - That the trees will continue to benefit the public amenity of the site and surroundings.

4 RECOMMENDATIONS.

Building near trees :

- 4.1 Foundations/structures in proximity to removed and/or retained trees should be specified by a structural engineer taking into account the potential for volumetric changes of the soil. Current guidance is set out in National House Building Council Chapter 4.2 (Foundations) Building near trees.
- 4.2 Root damage/severance can de-stabilise a tree.

Future Considerations :

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

Tree Protection Measures.

Root Protection Areas

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

- 4.5 Tree Protection Barriers and Ground Protection.

T4 should be protected by tree protection barriers and/or ground protection in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction - Recommendations*', prior to, during and post development if retention is desirable in the long-term.

Topography of the Site.

- 4.6 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

- 4.7 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.

- 4.8 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

- 4.9 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 OTHER CONSIDERATIONS

5.1 **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.

5.2 **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.

5.3 **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.

- 5.4 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.

Trees outside the property.

- 5.5 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.

6 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)

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APPENDIX 1

Tree Survey Schedule

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

All dimensions are estimated.

Tree No	Species	Height	Diameter (mm)	Branch	Height above ground(m)		Age Class	Structural	Physiological	Category
		(m)	as Annex C	spread	1 st branch	Canopy				
T 1	Poplar <i>Populus nigra italica</i>	15	Unknown	Unknown	Unknown	Base-2m	SM	Unknown	Appears Fair	C2 (Provisional)
Notes : Appears to have 2 -4 stems originating from near base. Access to the tree was not possible due to being located on private land.										
T 2	Poplar <i>Populus nigra italica</i>	15	Unknown	Unknown	Unknown	Base-2m	SM	Unknown	Appears Fair	C2 (Provisional)
Notes : Appears to have 2 -4 stems originating from near base. Access to the tree was not possible due to being located on private land.										
T 3	Ash <i>Fraxinus excelsior</i>	15	450	Unknown	5 East	3	M	Good	Good	A1&2 (Provisional)
Notes : Single upright stem. Access to the tree was not possible due to being located on private land.										
T4	Oak	11	950	N 0 S 7 E 2 W 7		2	M	Appears Fair	Fair	C (Provisional)
Notes : Access to the tree was not possible due to extensive impenetrable undergrowth. Main stem appears to arise from within the ditch.										

APPENDIX 2

Proposed site layout plan indicating tree locations
and indicative Root Protection Areas.



Tree Report for trees at Land North of Summer Lane. ©
Prepared by ARBORTECH(Consultancy May 2015.

APPENDIX 3.

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.

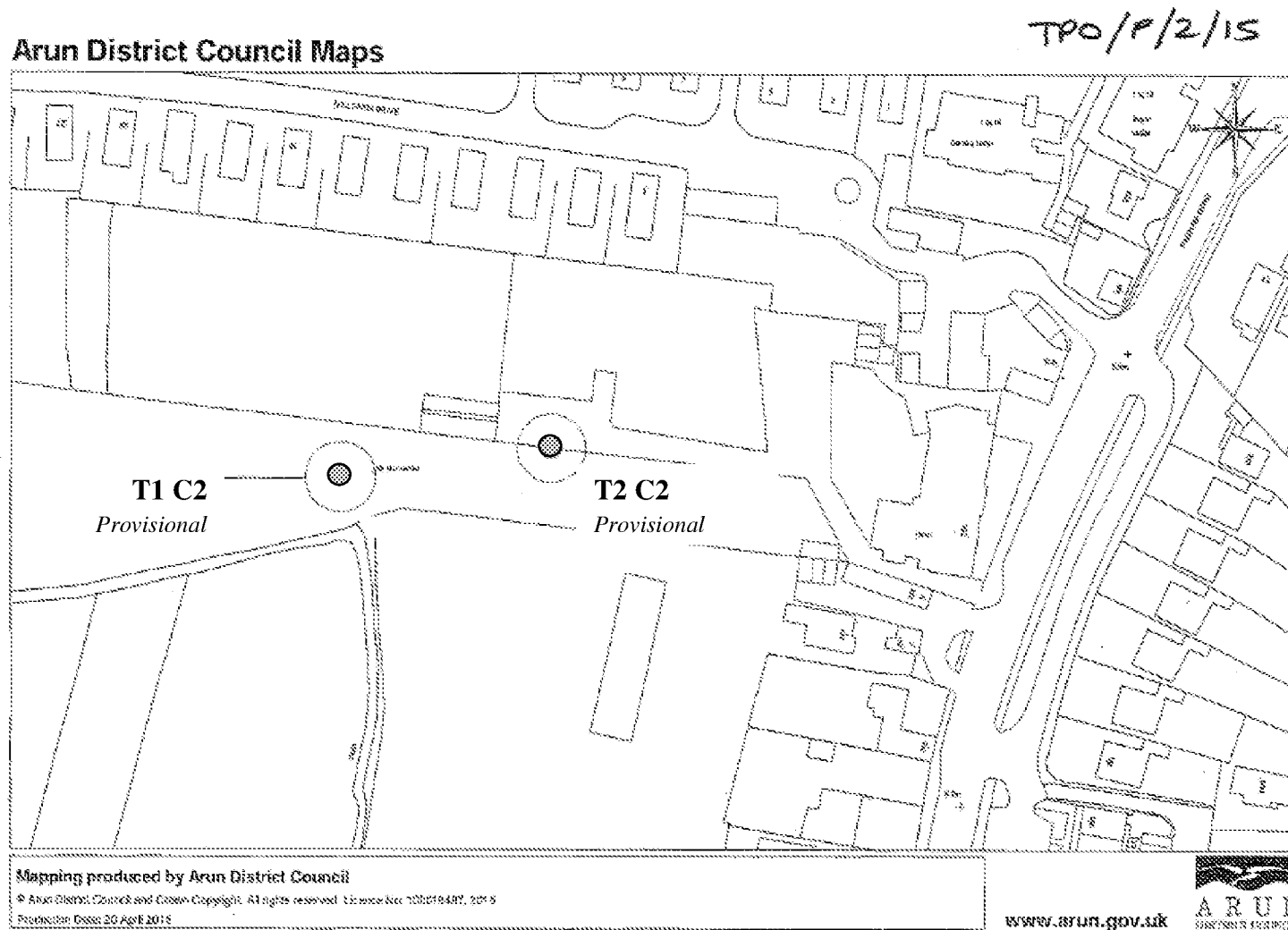
On the basis of this individual assessment, the trees are classified into one of the following categories, or intermediate categories

- | | | |
|---|---------|--|
| 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.

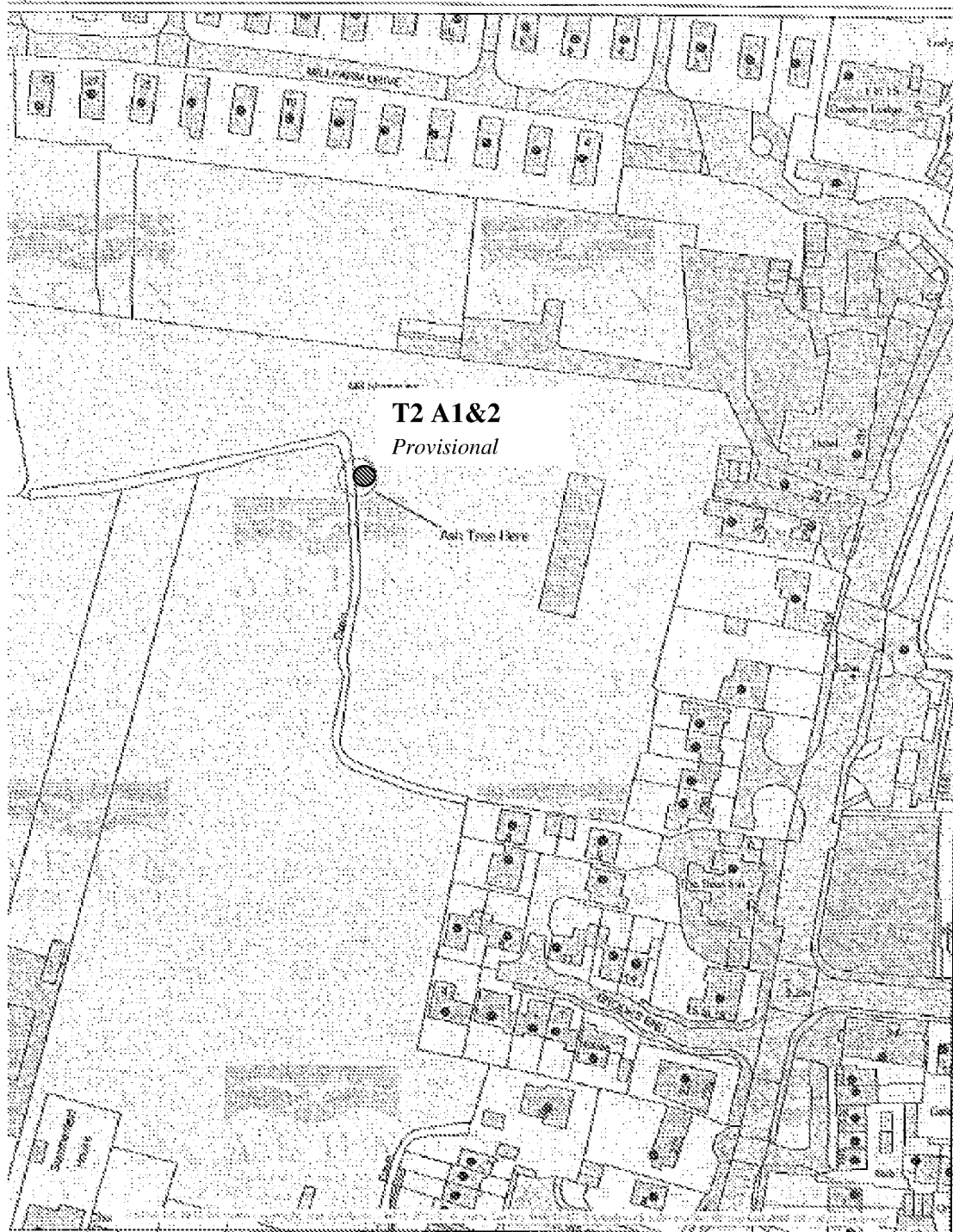
APPENDIX 4
TREE SURVEY (TPO) PLAN - Existing
2 x POPLAR TREES



APPENDIX 4 contd
TREE SURVEY (TPO) PLAN - Existing
1 x ASH TREE

Land at rear of 251 Pagham Road

TPO/P/1/15



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Scale 1:1405
 Date 27/2/2015
 Centre = 488368 E 58632 N
 Location of Ash Tree

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.