TREE SURVEY, ARBORICULTURAL
IMPLICATION ASSESSMENT &
TREE PROTECTION PLAN
BS5837:2012

Title:	**Arboricultural Report**
Instructed by:	Mr Jakob Sveen Brekenridge, 7 Richmond Wood, Sunningdale, SL5 0LG
Site Address:	Brekenridge, 7 Richmond Wood, Sunningdale, SL5 0LG
Date of Site Visit:	Tuesday 7th September 2021
Prepared by:	**Andrew Phelps (Professional Member of the 'Consulting Arborist Society')** Accredited by the 'Consulting Arborist Society' to carry out tree reports in accordance with BS5837:2012
Ref:	PS 3029
Date	Monday 15th August 2022

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Report Contents

BRIEF

A Detailed tree survey of all standing trees on the site to the following specification

Species name, Estimated height, Age Class, Condition key, General arboricultural comments and recommendations

Comments relating to the retention value of individual trees and tree groups within the delineated area to allow an assessment of development constraints

All information is to comply with BS 5837 – A guide to trees in relation to construction and BS 3998 – Tree works

B Production of an accompanying tree constraints plan in PDF format / AutoCad (on supplied topographical drawing) detailing; tree numbers, protected areas, special measure areas and protective fencing requirements, in order to allow an assessment of relevant constraints.

C Consideration of the quality of the tree stock, their contribution to public amenity and the suitability of the trees in the context of proposed development.

1 Scope of the Report / Instructions

1.1 My name is Andrew Phelps. I am an associate consultant with Phelps Associates., Arboricultural Consultants, 1 Church Street, Epsom, KT17 4PF. I am instructed by Mr Jakob Sveen to determine a tree survey for future development of the site at Brekenridge, 7 Richmond Wood, Sunningdale, SL5 0LG.

1.2 The main concerns of this report are to establish tree conditions and suitability to the site and landscape. Both general and specific tree management requirements are presented along with a tree/construction works specification. I am also asked to assess the likely impact of the proposed development on the surrounding trees and have included details of the working methods to be employed before and during construction.

1.3 The site was visited on Tuesday 7th September 2021 and all trees growing within potential influence on and off site were assessed (where possible) visually in accordance with Visual Tree Assessment (VTA) and compiled in the following survey sheets as numbered individuals and groups. Trees have been inspected from ground level only, and no decay detection equipment has been used.

1.4 No tissue samples were taken nor was any internal investigations of the subject trees undertaken.

1.5 No soil samples were taken.

1.6 The crown spreads were estimated by pacing.

1.7 Each individual tree has been assessed with general regard to condition, health and amenity, development context, retention value and commented upon in the following manner:

- Tree Number
- Tree Species
- Estimated height
- Estimated crown spread
- Diameter at breast height
- Vigour
- Retention value
- Arboricultural condition and recommendations for remedial works

1.8 Comments relate to species content, retention and amenity value, and have been provided with recommendations.

1.9 The trees have been classified according to their “desirability to retain”. This rates the amenity conferred by each tree and is based on the assumption that development will occur on the site and having given consideration to the recommendations of this report and BS 5837: 2012 – Table One.
For clarification – the grading system can be summarised as follows:
A – high quality & value, effective for more than 40 years
B – moderate quality & value, effective for more than 20 years
C – low quality & value, effective for 10 years
U – trees for removal (effective for less than 10 years)

1.10 To ascertain the overall condition of a given tree, the survey sheets should be used in conjunction with the condition key (4.1)

1.11 To ascertain the age class of a given tree, the survey sheets should be used in conjunction with the age class key (4.2)

1.12 Any specified remedial work recommendation is regardless of development plans and is based on current tree condition. Therefore the start date for the implementation of remedial works is as specified and from the date of survey.

2 Tree Works

2.1 All tree pruning, and felling identified within the pruning regime shall be carried out in accordance with BS 3998 2010 Recommendations for tree work.

2.2 All tree work should be undertaken by a suitably qualified Arboricultural Contractor. No works shall be carried out until permission has been granted by the relevant Local Planning Authority. The Forestry Authority should be contacted to check as to whether a Felling License is required.

3 Limitations

3.1 No assessment has been made of soil conditions/implications of soil conditions and root extent are indeterminate from this survey. We would urge that soil type is ascertained and tree related implications are assessed such as foundation type/depth in accordance with N.H.B.C. guidelines.

3.2 The survey boundaries have been taken from the supplied drawing. Boundary clarification will be required at various locations as recommended by this report.

3.3 The trees surveyed all fall within Windsor and Maidenhead Local Planning Authority. The site does not fall within a Conservation Area, but I believe there is one Oak tree covered with a Tree Preservation Order growing on site.

3.4 No liability can be assumed to rest with Phelps Associates should conditions alter following our inspection of the site. Therefore, we must be informed immediately of any alterations to plans upon which our assessments and conclusions/recommendations have been based.

4 CONDITION, AGE, VIGOUR, AMENITY & RETENTION VALUE KEYS

Condition Key

4.1 For the purposes of ascertaining the general overall arboricultural condition of the trees / compartments referred to in the survey sheets the following key should be used.

Good	Generally classed as having good overall structural and physiological condition. Specimens in good/excellent condition. They generally have few and less significant arboricultural defects than those trees classed as "B" or "C". Usually contribute significantly to the local or site amenity.
Moderate	Generally classed as having reasonable structural and physiological condition. They may contain smaller areas of included bark within either major or minor fork junctions. They may be subject to single or multiple fungal invasions, bacteria or virus. In the case of fungal invasion or bacteria the Latin name of the species has been stated. They may be subject to minor crown dieback, unusually pale or smaller foliage or have been subjected to outside influences such as restriction of rooting spread, vandalism or mechanical damage, but should be viewed as in generally good overall condition.
Poor	Generally classed as having poor overall structural or physiological condition. They may contain large areas of included bark either within major or minor fork junctions. They may be subject to single or multiple fungal invasions, bacteria or virus. In the case of fungal invasion or bacteria the Latin name has been stated. They may contain splits or cracks throughout the branching structure. They may be subject to significant crown dieback or exhibit unusually pale or small foliage, be defoliated or dead. They may be subject to outside influences such as restriction of rooting spread, vandalism or mechanical damage and costly to retain.

4.2 Age Class Key

NP	Newly planted
Y	Young - Tree/shrub in first third of life expectancy
MM	Middle Mature – Tree in 2nd third of life expectancy
M	Mature - In final third of life expectancy
OM	Over Mature – Declining in physiological functions

4.3 Amenity Value Classifications

High (`A`)	Significant contribution to either local landscape, landscape within site or both. Tree cover in this category should be carefully managed to ensure that the contribution played by the tree within the landscape is not compromised.
Moderate (`B`)	Indicates that the tree provides some contribution to the local landscape or landscape within site. Consideration should be given to enhancing the landscape with planting if required and management should aim to further enhance the local landscape.
Low (`C`)	Indicates little, no or a negative contribution to the local landscape.

4.4 Growth Vitality Key

N	Normal
M	Moderate (below normal)
P	Poor (sparse, weak)
D	Dead

4.5 Retention Value Key

The trees have been classified according to a desirability to retain. This rates the amenity conferred on each tree / tree group and is based on the assumption that development will occur and given consideration to the main report findings. The categories are contained in the table - Table 1: Retention Value Key found in Appendix 3 of this report.

5 General Description of Site and Proposed Development

5.1 The site is located on Richmond Wood in Sunningdale. The proposal sets out to remodel and extend the existing building, details of which can be provided by Concept Eight Architects Ltd.

6 Arboricultural Survey – Tree Details - Observations & Implications for Roots Throughout Construction Works

6.1 The attached Tree Survey Schedule (see Appendix 1) details the significant trees in respect of their dimensions and quality in accordance with the methodology set out in the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations. Appropriate and relevant comments are also provided. The removal of dead, dying and dangerous trees is considered to be appropriate tree management irrespective of development. The proposed tree works are to be considered in conjunction with the development application.

6.2 In the following paragraphs I have provided further information relating to specific trees and their management in the context of any proposed development.

6.3 The British standard recommends a minimum area around retained trees which should be protected from disturbance "in order to avoid damage to the roots or rooting environment." This 'Root Protection Area' (RPA) is calculated, using Table 2 of the British Standard, as an area equivalent to that of a circle with a radius 12 times the stem diameter for single-stemmed trees, and for trees with more than one stem, one of the two calculations methods should be used as at 4.6 of the BS5837:2012.

6.4 Paragraph 4.6.3 of the British Standard states that any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) The morphology and disposition of the roots, when influenced by past or existing site conditions;
b) Topography and drainage;
c) The soil type and drainage;

The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

6.5 **T.1 Oak (TPO).** Recorded as being a Category 'A' tree of high quality and value, and a good example of its species. The tree plan at Appendix 2 shows us that the newly modified building within the tree's protection area has been designed to sit on the existing house footprint in order to avoid any unnecessary foundation excavations.

Minimal load bearing foundations within the RPA of T.1 Oak.

The tree plan also shows us that protective fencing will be erected on top of the hard standing patio area (to be retained throughout development) and only removed if ground guards/protection is laid on top of a compressible layer of woodchip to be 150mm deep.

6.6 All the larger trees included in this document (T.2 Beech, T.3G Sycamore, T.4G Pines/Conifers) were growing off site and a considerable distance from the proposed development. In my view none of these trees would be adversely affected by any construction works, and the existing boundary fencing/hedging would act as tree protection.

7 On Site Storage of Spoil and Building Materials

7.1 Prior to and during all construction works on site, no spoil or construction materials will be stored within the RPA of any tree on, or adjacent to the site, even if the proposed development is to be within the RPA. This is to reduce to a minimum the compaction of the roots of the trees. All building material will be stored on the front garden/drive area. Material can then be moved by hand for construction works.

7.2 Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe work shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

7.3 All material storage facilities and work areas must consider the effects of sloping ground on the movement of potentially harmful liquid spillages towards or into protected areas.

8 Levels

8.1 There will be no level changes within the RPA of retained trees on or off site. However, if it were necessary for these to occur, appropriate measures must be taken to prevent or minimise any detrimental effects on the affected root systems as detailed in 8.2 and 8.3 below.

8.2 If it is necessary to excavate so close to trees that roots greater than 50mm diameter are likely to be encountered, particular care will be taken to avoid damage. Excavation in these areas will be undertaken by hand or using an air spade, avoiding any damage to the bark. The roots will be surrounded with sharp sand prior to the replacing of any soil or other material in the vicinity.

8.3 If it is necessary to raise levels, it is essential that adequate supplies of water and oxygen through the soil to the trees' roots. Therefore, where necessary, a granular material will be used which will not inhibit gaseous diffusion. Possible options are no-fines gravel, cobbles or, Type 2 road-stone. All hard surfaces will be of suitable specification to allow such gaseous diffusion, e.g. brick pavers.

9 Services

9.1 All piped and ducted services (drainage) which include mains water, electricity, gas and telecommunications will run from the existing building and therefore will not enter the root protection area of any tree during construction, all details of service runs can be provided by the project Architect. Drainage will be installed in accordance with the

recommendations of NJUG Volume 4:'Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees'.

9.2 It is therefore proposed that all underground service runs will be placed outside the RPA of the trees on or adjacent to the site.

9.3 All routes for overhead services will aim to avoid the trees. Where this is unavoidable, any tree work will be agreed prior to commencement with the Arboricultural Officer.

9.4 All service providers (Statutory Authorities) will be consulted prior to commencement of works with the aim of minimising the number of services runs on the site.

10 Assessment of Proposed Development – Implications for Crown

10.1 There is adequate clearance between the canopies of all trees recorded to allow the proposed development.

11 Tree Maintenance

11.1 There is adequate working space and clearance for all construction to be carried out during the development. Pruning works (if required) are included below. 'Recommended Schedule of Tree work' and would be undertaken in accordance with the recommendations of BS3998:2010 'British Standard Recommendations for Tree Work'. All tree pruning would reflect the character of the species and would not reduce the amenity value of retained trees.

12	**Recommended Schedule of Tree works (Initial Tree Works)**
12.1	No Recommended Tree Work Required
13	**Time Table/Arboricultural Method Statement**
	1. Installation of tree protection measures (fencing) to facilitate construction works 2. Tree protection measures to be signed off by either the LPA Arboricultural Officer or the appointed Arboriculturalist 3. Main construction work carried out 4. Protective fencing removed on completion of works

14 Conclusions

14.1 If protective fencing is used as shown on the 'Tree Protection Plan' at Appendix 2 then the good health of T.1 Oak is assured in my opinion.

14.2 If the hard standing patio/paving is retained throughout construction works then the good health of T.1 Oak is assured in my opinion.

14.3 If the patio/paving is lifted for any reason or damaged in any way then ground protection will be laid on top of 150mm of woodchip as set out at Appendix 7.

14.4 All protective fencing must be erected before delivery of ground works equipment and machinery in order to provide effective tree protection.

14.5 The recommended tree root protection areas of trees marked on the 'Tree Protection Plan' should be seen as the broad limiting factors to the use of the site.

14.6 The design of the scheme accords with the relevant BS for trees and development (5837:2012) and for the vast bulk of the proposal exceeds the guidelines produced in this document.

14.7 Subject to proper and normal tree protection measures, the proposed development will not impinge adversely on the effects of the trees in the landscape.

14.8 A 'Construction Exclusion Zone Notice' must be attached to tree protective barrier/fencing at regular intervals, as shown at 'Appendix 6'.

I hope that you find this report satisfactory, please do not hesitate to contact me if I can be of further assistance.

Signed [redacted] Date. Wednesday 10th August 2022

Appendix 1 – Tree Survey Schedule

4.1 Tree Survey Schedule

Site:	7 Richmond Wood, Sunningdale, SL5 0LG	**Surveyor:**	**Andrew Phelps**
Date of Survey:	Tuesday 7th September 2021	**Ref:**	PS 3029

Tree No	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter (mm)	No of Stems	Protection Radius	Vigour (Growth Vitality)	Structural Condition	Amenity Landscape Contribution	B.S Cat Ret Value	Sub Cat	Useful Life	Structural Condition/Observations
T.1	Oak	14	5	7	Mature	800	1	**9.6**	Normal	Good	Medium	A	1/2	40	No visual defects found during survey (7th Sep 2021)
T.2	Beech	12	6	5	Mature	700 Est	1	**6.6**	Normal	Unknown	Medium	A	1/2	40	Could only view tree from distance, therefore, could not assess trees health or structural integrity.
T.3G	Sycamore x 2	12	5	5	Mature	500 Est	1/2	**6.0**	Normal	Unknown	Medium	B	1/2	40	Could only view trees from distance, therefore, could not assess trees health or structural integrity.
T.4G	Conifers/ Pines	Up to 12	4	6	Mature	Up to 300	2	**3.6**	Normal	Unknown	Medium	B	1/2	40	Could only view trees from distance, therefore, could not assess trees health or structural integrity.
T.5G	Various Species, mostly small Conifers	Up to 6	2.5 Max	2	Mature	Up to 200	1	**2.4**	Normal	Good	Medium	C	2	20	Relatively small trees, generally in good condition

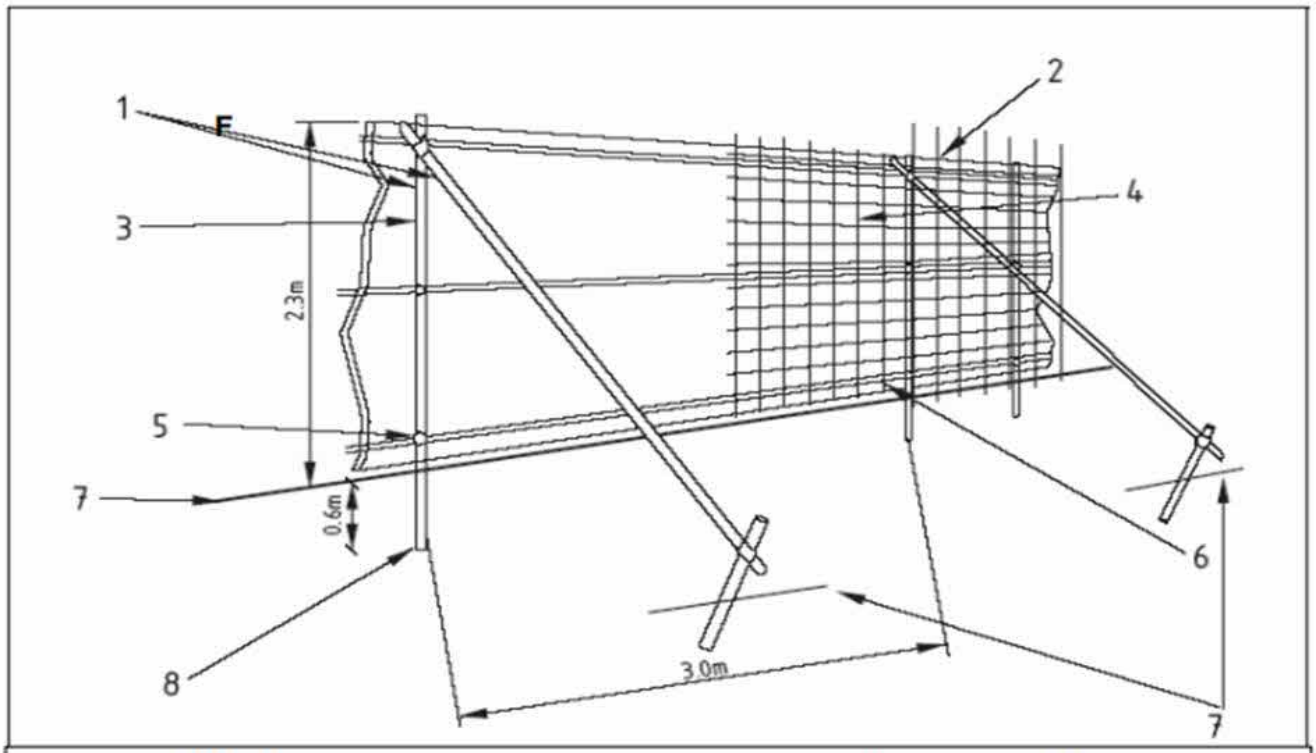
1. Height describes the approx. height of the tree in metres from ground level.
2. Crown spread refers to the crown radius in metres from the stem centre and is expressed as an average of NESW if symmetrical
3. Ground Clearance is the height in metres of crown clearance above adjacent ground level.
4. Diameter Breast Height (DBH) is the diameter of the stem measured in mm at 1.5m from ground level for single stemmed trees or at ground level for multi-stemmed trees. DBH may be estimated where access is restricted.
5. Age Class is the tree's relative age to its species and is expressed as Newly planted (NP) Young (Y), Middle Mature (MM), Mature (M) and Over Mature (OM).
6. Protection Multiplier is 12 for single stemmed trees and for trees with more than one stem diameter(s) should be measured in accordance with Annex C, and the RPA should be determined from Annex D of the BS5837:2012.
7. Protection Radius is a radial distance in metres measured from the trunk centre.
8. Growth Vitality - Normal; Moderate (below normal); Poor (sparse, weak); Dead (dead or dying tree)
9. Structural/Arboricultural Condition – Good (no or only minor defects); Moderate (remediable defects); Poor (major defects present). See Condition Key (4.1) for detail
10. Landscape Contribution – High (prominent landscape feature); Medium (visible in landscape); Low (secluded/among other trees)
11. B.S Cat refers to (BS 5837:2012 Table 1) and refers to tree/group quality and value; 'A' – High; 'B' – Moderate; 'C' – Low; 'U' – Remove. **See Table 1 – Cascade chart for tree quality assessment**
12. Sub Cat refers to the retention criteria values where 1 is arboricultural, 2 is landscape and 3 mainly cultural values, including conservation.
13. Useful Life is the tree's estimated remaining contribution in years.

Appendix 2 – Tree Protection Plan

Appendix 3 – Retention Value Key

TREES FOR REMOVAL				
Category and definition	**Criteria (including subcategories where appropriate)**			**Identification on Plan**
Category U Those in such a condition that any existing value would be lost within 10 years, and which should, in the current context, be removed for reasons of sound arboricultural management	Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e., where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g., Dutch Elm Disease) or very low-quality trees suppressing adjacent trees of better quality **NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.**			**Dark Red** 0
TREES TO BE CONSIDERED FOR RETENTION				
	Criteria – Subcategories			
Category and definition	**1. Mainly arboricultural values**	**2. Mainly landscape values**	**3. Mainly cultural values (including conservation)**	
Category A **Trees of high quality with** an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or those that are essential components of groups or formal or semi-formal Arboricultural features (e.g., the dominant and/or principal trees within an avenue)	Trees, groups, or woodlands of visual importance as Arboricultural and/or landscape features	Trees, groups, or woodlands of significant conservation, historical, commemorative or other value (e.g., veteran trees or wood-pasture)	**Light Green** 2
Category B **Trees of moderate value** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g., presence of significant though remedial defects, including remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated to make little contribution to the wider locality	Trees with material conservation or other culture value	**Mid Blue** 30+
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	**Grey** 40+

Appendix 4 – Protective Fencing



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

Fig 2 Minimum Tree Protection Barrier Requirement - BS 5837_2012

Typical Barrier Construction

Typical Ground Anchor Method

Appendix 5 – Tree Protection Induction Forms

TREE PROTECTION INDUCTION FORM

NAME: .....

COMPANY: .....

The trees growing on and off site near 7 Richmond Wood, Sunningdale, SL5 0LG are important features in the landscape, providing some amenity to the area. The retention of these trees is important and they must not be damaged in any way. To protect these trees, a fencing will be constructed and this needs to remain in good condition and in situ until the construction is completed.

To reduce the chances of damaging this tree, please observe the following:

DO NOT **use trees as a support for electricity wires, telephone lines or signs**

DO NOT **use the area within the protective barrier to store or mix materials**

DO NOT **light bonfires anywhere near trees – use a designated bonfire area**

DO NOT **attempt any excavation works within the protective area (Except where works approved by LPA)**

If the recorded tree or the protective barrier become damaged during construction, please report this to the site Manager immediately.

I have read and understand the above:

....
(Print) (Signed) (Date)

TREE DAMAGE PROCEDURE

CONSTRUCTION MATERIAL SPILLAGE	DIRECT DAMAGE TO TREES	ROOT DAMAGE TO TREES
Materials include fuel, Chemicals, paint, Cement, etc. Contain spillage Immediately. Remove top layer of Contaminated soil if possible without damaging the rooting system. Contact LPA Tree Officer and seek Further advice.	**Bark Damage:** Replace area of damaged bark and cover with polythene Contact LPA Tree Officer and seek further advice **Branch Damage:** Remove damaged section of branch using a clean sharp pruning saw if it is safe to do so. Contact LPA Tree Officer and seek further advice.	Backfill damaged area using good quality topsoil. Apply woodchip to a depth of approximately 150 millimetres to retain soil moisture. Contact LPA Tree Officer and seek further advice.

Any queries regarding this Method Statement should be addressed, in the first instance, to **Phelps Associates Arboricultural Consultancy**:

Telephone: 07877 822976
E-mail: info@treeconsult.co.uk

Appendix 6 – Construction Exclusion Zone Notice


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


TREE PROTECTION AREA
KEEP OUT !
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Appendix 7 – Ground Protection

Ground-Guards Bulletin

TREE ROOT PROTECTION DURING CONSTRUCTION PROJECTS

The Department for Communities and Local Government's guide "Tree Roots in the Built Environment" states that *"ground protection should be installed before any materials or machinery is brought onto the site"*(Section 9.3.3.2)

It has been shown that *"the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground"* (Section 4.2.3)
Thus it is essential that ground protection is specified and installed from day one of construction projects.

Failure to protect the ground from compaction will lead to reduced water and oxygen infiltration to the tree roots, and can ultimately lead to the decline of the tree.

Ground-Guards

Tel: 0113 267 6000
Fax: 0113 267 2222
Email: info@greentek.org.uk

Ground protection is essential to maintain the health of tree roots on construction sites.

The use of GROUND-GUARDS for tree root protection

The **Ground-Guards** temporary roadway system is frequently used on construction sites to protect the ground from erosion and damage by construction vehicles. **Ground-Guards** are usually installed as a roadway consisting of a parallel track of 2.4m x 1.2m panels with a 1.2m space in between. Where a temporary roadway must pass near to trees, the following extra precautions must be taken in order to provide cushioning for the ground under the tree canopy:

1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under the tree canopy, and preferably under the whole of the trackway.
3. A pad of Ground Guards, three boards wide should be laid on top of the geotextile membrane, between the timber rails.
4. A 150mm deep layer of wood chippings should be laid.
5. The twin trackway can then be laid so that it rises over the wood chippings as it passes under the tree canopy. Extra Ground-Guard boards should be installed in the gap between the twin trackway at this point to retain the wood chips in place.

Ground-Guard trackways should have additional cushioning installed where they pass near to trees.