

Arboricultural Report

Tree Survey
Arboricultural Impact Assessment
& Tree Protection Plan

Land at
Evergreen Farm
West Hoathly Road
East Grinstead
West Sussex
RH19 4NE

Prepared by:

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AR/60118

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1.0 Summary

1.1 Site summary:

The subject site is located on land at Evergreen Farm, West Hoathly Road, East Grinstead, West Sussex, RH19 4NE. The proposal relates to the soil capping and landscaping of land within the main body of the site.

1.2 Existing trees (Section 8 refers):

I surveyed twenty-six individual trees, twenty groups of trees, five lengths of hedgerow, three areas of woodland, and one area of trees in November 2018.

1.3 Condition of existing trees (Section 9 refers):

One individual off-site tree (T44 - Oak), and one off-site group of trees (G46 - Alder) were considered to be in such a condition that their removal is recommended irrespective of the outcome of this proposal.

1.4 Consequences of development on trees (Section 9 refers):

Two individual trees, four groups of trees, part of an additional group of trees and two lengths of hedge line would be directly lost if the proposal were to be implemented.

1.5 Tree Works (Section 10 refers):

No additional tree works are anticipated to take place in order to implement this proposal.

1.6 Tree Protection (Section 11 refers):

In order to protect the root systems of retained trees during the construction period the installation of one tree protection barrier is recommended.

1.7 Ancient woodland (Section 12 refers):

Part of the site is adjacent to an area of identified ancient woodland.

- The impact of the proposed development on the adjacent woodland is assessed as being minimal, using Forestry Commission and Natural England guidelines.
- Measures to protect the woodland during the implementation of the works are recommended.

1.8 Conclusion:

If the recommended tree protection measures are installed and adequately supervised, I consider that the proposal can be successfully implemented while protecting the retained trees to a level which complies with current arboricultural standards.

2.0 Details of survey

The Site:	Land at Evergreen Farm, West Hoathly Road, East Grinstead, West Sussex, RH19 4NE
TMC Ref:	AR/60118
Local authority:	Mid Sussex District Council
Survey date:	16 th November 2019
Report date:	16 th May 2019
Surveyed by:	Clive Mayhew BA (Hons), MICFor, FArbor.A., CEnv

3.0 Instructions

3.1 I have been instructed to:

1. Survey the trees potentially affected by the proposal.
2. Produce an arboricultural report fully compliant with the recommendations contained within 'BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.'

3.2 My name is Clive Mayhew and I am the author of this report. I have over 35 years of experience in tree, landscape and ecology management in both the public and private sectors. I am a Chartered Arboriculturist within the Institute of Chartered Foresters, a Chartered Environmentalist, and a Fellow of the Arboricultural Association.

4.0 Site details

- 4.1 **Site description:** The subject site is located on land at Evergreen Farm, West Hoathly Road, East Grinstead, West Sussex, RH19 4NE.
- 4.2 **Proposal details:** The proposal relates to the soil capping and landscaping of land within the main body of the site.
- 4.3 **Existing structures:** There are no existing permanent structures within the footprint of the proposed area of soil cap.
- 4.4 **Existing topography:** The southern entrance and boundary to the site is essentially level, but the ground falls away quite steeply to the north across the whole body of the site.
- 4.5 **Existing vegetation:** In addition to the trees listed within this report, the ground vegetation at the time of my inspection was improved grassland.
- 4.6 **Solid Geology:** The soil type is of relevance because soils with a high clay content can be compacted, which in turn can be extremely damaging to tree roots. The British Geological website indicates the bedrock geology across the body of the site to be from the Wadhurst clay formation, with the northern portion being underlain with Ardingly and Tunbridge Wells sand formations. The clay content within the soils in the body of the site is likely to be high, and the tree protection measures advocated in this report recognise that potential.
- 4.7 **Soils:** The Cranfield Soil and Agrifood database identifies the overlying soil within the area as slightly acid clayey loam with impeded drainage and with moderate to high fertility. However, given the site's history and from site survey observations, it is clear that the surface layers are made up of both soils, and other additional imported material.

5.0 Planning history

- 5.1 I have been given no details regarding the site's planning history.

6.0 Protected trees

- 6.1 I have been given no information to indicate that the trees on site, or adjacent to it, are currently protected by a Tree Preservation Order.
- 6.2 It should be noted that the legal status of trees can change at any time through the serving of a new Tree Preservation Order or the creation of a Conservation Area, and this should be checked prior to the commencement of any works.

7.0 Documents supplied

7.1 I have been supplied with proposal plans by Fluid Planning.

8.0 Existing trees

8.1 I surveyed twenty-six individual trees, twenty-two groups of trees, five lengths of hedgerow, three areas of woodland, and one area of trees in November 2018. The survey information is appended to this report (See Appendix C).

8.1.1 I classed the trees according to the classifications outlined within BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' (See Appendix E).

8.1.2 I classified one individual tree, one group of trees, and one area of woodland as A Grade. BS5837 considers that A grade trees are of high quality with an estimated remaining life expectancy of at least 40 years.

8.1.3 I classified fourteen individual trees, ten groups of trees, two hedgerows and one area of woodland as B Grade. BS5837 considers that B grade trees are of moderate quality with an estimated remaining life expectancy of at least 20 years.

8.1.4 I classified ten individual trees, ten groups of trees, one area of woodland, three lengths of hedgerow and one area of trees as C Grade. BS5837 considers that C grade trees are of low quality with an estimated remaining life expectancy of at least 10 years.

8.1.5 I classified one individual off-site tree and one off-site group of trees as U grade. BS5837 considers that U grade trees are those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

8.2 Location of trees

8.2.1 The individually surveyed trees are plotted at Appendix A and described in the tree survey schedule at Appendix C.

9.0 Arboricultural Impact Assessment (AIA)

9.1 The recommendations made here relating to tree retention, removal and planting are informed by current arboricultural, planning and urban design best practice, primarily British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations,' which advocates a pragmatic approach to tree removal and retention, based on sustainability.

9.2 Trees requiring removal *irrespective of the proposal*

9.2.1 One individual off-site tree (T44 - Oak), and one off-site group of trees (G46 - Alder) were considered to be in such a condition that their removal is recommended irrespective of the outcome of this proposal.

9.3 Trees requiring removal as a *consequence of the proposal*

9.3.1 Two individual trees, four groups of trees, part of an additional group of trees and two lengths of hedge line would be directly lost if the proposal were to be implemented.

9.3.2 T40 & T41 – Oak

Reason for removal: These trees are beneath the soil cap's footprint.

Appraisal: These trees are located at the very northern tip of the site. Given the substantial adjacent tree cover that will remain – namely within W39 and A43 – I consider that any net loss of visual amenity will be minimal, and given the extent of proposed post works planting, entirely acceptable within the context of the proposal.

9.3.3 G48 – Goat willow & sycamore, G50 – Oak & G53 – Cypress (Part)

Reason for removal: These trees are beneath the soil cap's footprint.

Appraisal: These trees are located along the site's northern boundary and their removal will result in some loss of visual amenity to the interior of the site, but none to any public areas beyond the site's boundaries. The amenity loss will be mitigated by the existing retained planting beyond the northern boundary, and the proposed post works planting. As a consequence, I consider the removal of these trees to be acceptable within the context of the development.

9.3.4 G52 – Goat willow, G54 – Oak, H56 – Cotoneaster, & H57 – Thorn x3

Reason for removal: These trees are beneath the soil cap's footprint.

Appraisal: None of these groups or hedges provide any significant visual amenity impact beyond the site's boundaries and I consider their removal to be entirely acceptable within the context of the proposal.

10.0 Tree Works

- 10.1 No tree works in addition to the removals listed above are anticipated to take place in order to implement this proposal.
- 10.2 If any works do occur, they should comply with the recommendations contained within British Standard 3998:2010 'Tree Work' and undertaken with the consent of the local planning authority – if such consent is required.

11.0 Arboricultural Method Statement (AMS)

11.1 Root Protection Areas (RPAs)

The identification of Root Protection Areas is the primary means by which retained trees are protected on construction sites. No unspecified activity should occur within any prescribed RPA, access should only be permitted with prior approval of the Local Planning Authority, and encroachment should normally only take place if the ground beneath is suitably protected.

- 11.1.1 BS 5837:2012 provides arboriculturists with a method to determine the extent to which excavations associated with construction works might have a damaging effect on the roots of adjacent trees. The Standard enables an RPA to be calculated from the diameter of each retained tree, and this is usually described as a circle with a radius at the prescribed distance from that tree.

11.2 RPAs and the subject site:

I have calculated the RPAs of the retained trees as recommended within BS 5837:2012. This area is shown as a dashed red line around retained trees at Appendix B.

- 11.2.1 Some aspects of the proposed development will potentially occur in close proximity to the nominal RPAs of retained trees on site.

11.2.2 Site specific considerations:

I consider the following factors to be relevant in considering the extent of these encroachments in a site-specific context:

1. The illustrated Root Protection Areas at Appendix B are based upon a notional representation of the RPA as a circle centred upon the base of the stem. However, the British Standard recognises the potential for this to be a crude oversimplification of actual root spread, and that specific site conditions can result in the development of asymmetrical root systems – See Paragraph 4.6.2 of BS 5837:2012. In such situations the British Standard suggests that it should be demonstrated that the trees in question should remain 'viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA' – See paragraph 5.3.1 of BS 5837:2012.

2. **The subject site:** Although much of the surface soil layer within the site is made-up, the indigenous soils around it appear to be in good condition and able to support root growth compensatory to any which might be lost through development encroachment.

11.3 Site specific tree protection measures

I make the following recommendations regarding site specific tree protection measures:

11.4 Protective barriers

11.4.1 BS 5837:2012 recommends that the RPAs of the subject trees should be protected by the erection of barriers, the preferred form of which consists of welded mesh 'Heras' type panels 1.8 metres high, mounted on a braced scaffolding frame as detailed in Figure 2 & 3 of BS 5837:2012. (See Appendix F). The barriers should carry laminated signs stating: "Construction exclusion zone – No Access," or similar. (See Appendix G). It is recommended that gaps should be left beneath the bottom of any perimeter site fencing and the ground to allow for the passage of foraging mammals.

11.4.2 **The subject site:** The requirement for one Tree Protection Barrier has been identified and this has been illustrated at Appendix B.

- **TPB 1** – A single continuous barrier around the periphery of the site is recommended in order to protect the RPAs of retained trees from potential damage during the implementation of the works. Given the size of the site and the nature of the proposal, it may not be necessary to erect the full extent of the barrier for the whole duration of the works. It may be possible to implement a phased or zonal approach whereby individual sections are erected for the duration of works occurring in a particular area adjacent to retained trees.

11.5 Soil Capping Works

11.5.1 The proposal includes the introduction of a clay capping layer across the full width of the body of the site.

11.5.2 In some locations the extent of this capping area extends into the defined RPAs of retained trees. Increases in soil levels within the RPAs of trees can be detrimental to root growth, primarily as a result of restrictions in gaseous exchange within those soil layers. Unfortunately, it is not possible to withdraw the extent of the cap to beyond the RPA perimeters, because this would fundamentally compromise the effectiveness of the capping layer. However, I consider that the installation of the capping layer - as designed and illustrated at Appendix B - is acceptable in relation to retained trees, because in all cases across the site only a proportion of the RPAs of retained trees are being compromised.

11.5.3 In the unlikely event that any retained trees are affected by the works, that affect will only become apparent in the longer term and will be manifested through an incremental reduction in crown vitality. My recommendations in this regard are that:

- 1) Any such trees are monitored for symptoms of dieback as described above.
- 2) If any such symptoms do occur, a decision can then be taken with regards to the future management of individual trees. Standing deadwood is recognised as potentially valuable habitat, and therefore it may be appropriate to retain and manage any such declining trees for their increased wildlife value.

11.6 Demolition

11.6.1 No specific demolition works of permanent structures are identified as part of this proposal. However, no works of any description should commence until the tree protection measures specified above have been installed on site.

11.7 Utilities

11.7.1 Where supply of any underground utilities passes through the RPAs of retained trees BS 5837:2015 recommends that detailed plans should be drawn up in conjunction with an appropriately qualified arboriculturist - See Section 7.7 of the British Standard.

11.8 Other general activities

11.8.1 Many of the activities which occur on construction sites are potentially damaging to trees. These include the location of site huts, parking arrangements, the storage of materials, the storage of rubbish, and the movement and operation of plant. It is important to understand the range of potentially damaging activities that might occur on a particular site and ensure at an early stage that these possible conflicts are recognised and avoided. Therefore, areas designated for site huts, parking and storage of materials should be identified prior to the commencement of works and agreed with the Local Planning Authority.

11.8.2 **The subject site:** There appears to be ample room to enable areas for storage, and other aspects of site accommodation to be identified that are not in conflict with the tree protection measures recommended in this report. This aspect of site management should be established and agreed with the local authority, potentially in conjunction with an appropriately qualified arboriculturist, prior to the commencement of works.

12.00 Ancient Woodland

12.1 The site's eastern boundary adjoins Rockingshill Wood, parts of which are designated as ancient semi-natural woodland (ASNW).

12.2 Natural England publishes standing advice with relation to ancient woodland and development (Ref: StAdv/AWVT/NE/Apr2014). The advice includes guidance which can be used in conjunction with a Forestry Commission Assessment Guide, to help local authorities assess impacts when dealing with applications potentially affecting ancient woodland and veteran trees. I have used the methodology to assess the potential impact of the proposed development on the adjacent woodland, and to consider any mitigation measures that may be appropriately adopted to offset any possible damage to - or loss of - this woodland. The guidance suggests a three-step assessment process:

12.3 **Step 1 - Will the proposal cause direct loss of, or impact on, ancient woodland or veteran trees?**

The subject site: Although the soil cap will extend to the edge of the woodland boundary it will not encroach into the ancient woodland, nor will it result in the loss of any veteran trees within it. In considering this aspect of the works the following should be noted:

- 1) The northern section of the ancient woodland designation falls short of the actual on-site woodland edge – Appendix B refers.
- 2) The southern stretch of the woodland boundary has either been previously cleared, or currently is supporting semi-mature growth of willow and alder within W38 – Appendix B refers.

12.4 **Step 2 - How will development of adjacent land impact on ancient woodland and veteran trees?**

The guidance lists potential impacts and the effects they might have on adjacent woodland, and each of these is considered individually below:

12.4.1 **Potential impact:** Fragmentation and loss of ecological connections with surrounding woodland/veteran trees and the wider natural landscape.

The subject site: The proposal is restricted to the body of the adjacent site and as such will not result in the loss, or fragmentation, of any ecological connections within the remaining woodland, or with veteran trees in the wider landscape.

12.4.2 **Potential impact:** Effects on the root protection areas of individual trees:

The subject site: The capping works will occur outside of the root protection areas of *trees within the designated ancient woodland*.

- 12.4.3 **Potential impact:** Reduction in the area of other semi-natural habitats adjoining ancient woodland.

The subject site: The semi-natural habitats adjacent to the woodland will be significantly improved following completion of the works, firstly because of the capping and containment of material within the site, and secondly as a result of the post-works landscaping proposals.

- 12.4.4 **Potential impact:** Increased exposure to pollutants from the surrounding area.

The subject site: The primary motivation for the proposed works is to reduce and control pollution from the material lying beneath the capped area.

- 12.4.5 **Potential impact:** Increased deposition of dust, particularly from quarries, resulting in physical and/or chemical effects.

The subject site: Given the nature of the proposed works and their ultimate aim, I do not consider that dust levels will be increased to an extent that the adjacent woodland would be harmed in any way.

- 12.4.6 **Potential impact:** Impacts on local hydrology through drainage or water table levels changing.

The subject site: Given the nature of the works, a detailed hydrology assessment of the site has been made, and water flows across the site have been assessed in great detail. Given this, and the fact that the woodland is at a higher level than the main body of the site, my expectation is that there will be no fundamental changes to the local hydrology within the woodland.

- 12.4.7 **Potential impact:** Increased public use near veteran trees, such that safety works leading to possible damage to the tree may be needed.

The subject site: The proposal relates solely to land in private ownership. No public rights of way are affected and there will be no variation to the extent of public access to the woodland resulting from the implementation of this proposal.

- 12.4.8 **Potential impact:** Change to the landscape context for ancient woods and veteran trees.

The subject site: At present the existing area adjacent to the woodland is largely maintained as improved grassland. Following the implementation of the works much of this area will be planted with native species woodland. This will have the potential to significantly enhance the area following the implementation of the proposal and complement the existing wooded landscape context of the area.

- 12.4.9 **Potential impact:** Change to light pollution at night (if development includes street lighting).

The subject site: My understanding is that no external lighting is proposed.

- 12.4.10 **Potential impact:** Fly tipping, garden encroachment and increased predation from cats.

The subject site: I consider that these potential impacts are not relevant with regards to the length of shared ancient woodland boundary on the site.

- 12.5 **Step 3 - Identify any mitigation measures which could be used to avoid or reduce the impacts upon the ancient woodland / veteran trees.**

Although the body of the ancient woodland will not be directly affected by these proposals, there are still mitigation measures which can be adopted to reduce any potential indirect impact of development. My recommendation would be that the following is incorporated into the scheme:

- 12.5.1 **Protective fencing:** The woodland boundary should be demarcated with a suitably robust barrier during the period of the implementation of these works. The nature and extent of this fencing has been specified at 11.4 above, and its location illustrated at Appendix B.

13.00 Post development pressure

- 13.1 When new structures are located near to trees there may be pressure to prune or remove them because of concerns that the trees might fail in some way, or because of perceived shading. Inevitably the tolerance of individuals towards trees varies considerably; one may take exception to the proximity of adjacent trees while another will happily coexist with the same juxtaposition. In addition, the adopted fenestration configuration and internal layout of living rooms should be mindful of the perceived problems of shading, and as a consequence this issue can be successfully addressed at the design stage.

- 13.2 **The subject site:** Given the nature of the proposal, I do not consider that post development pressure directed towards retained trees will be an issue with this scheme.

14.0 Sequence of works

- 14.1 The sequence of works should be as follows:

- 1) Erection of tree protection barriers
- 2) Capping works
- 3) Removal of tree protection barriers

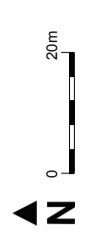
15.0 Recommendations










- 15.1 It is recommended that the tree protection measures advocated in this report should be followed at all times. Any deviation should only occur following consultation with the local authority's arboricultural officer, and then only with their specific approval.
- 15.2 It is recommended that a suitably qualified arboriculturist supervises the installation of the tree protection measures and confirms that they comply with BS 5837:2012, and if necessary briefs the individual who will be responsible for the maintenance of tree protection measures for the duration of the works.
- 15.3 An individual should be identified as a point of contact for arboricultural matters for the duration of the works. This individual will need to be familiar with the arboricultural constraints presented by the site, the tree protection measures that have been installed, and the requirement to keep those measures adequately monitored and maintained.

16.0 Conclusion

- 16.1 I consider that this scheme is acceptable in arboricultural terms and that the subject trees can be protected according to current standards, providing the recommended mitigation measures are adopted.

APPENDIX A



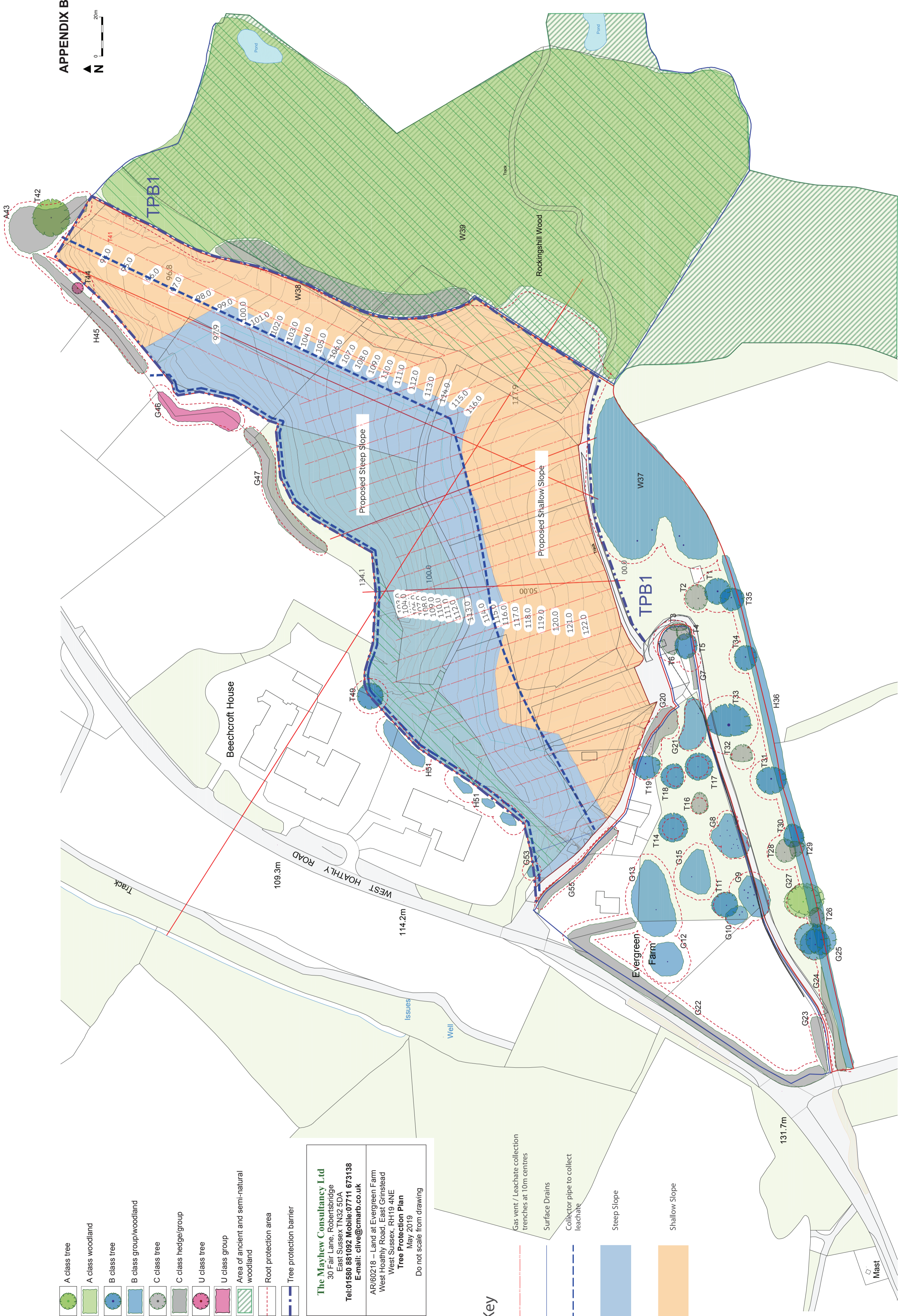
-  A class tree
-  A class woodland
-  B class tree
-  B class group/woodland
-  C class tree
-  C class hedge/group
-  U class tree
-  U class group
-  Area of ancient and semi-natural woodland

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AR/60218 – Land at Evergreen Farm
 West Hoathly Road, East Grinstead
 West Sussex, RH19 4NE
Existing Tree Plan
 May 2019

Do not scale from drawing

APPENDIX B



- A class tree
- A class woodland
- B class tree
- B class group/woodland
- C class tree
- C class hedge/group
- U class tree
- U class group
- Area of ancient and semi-natural woodland
- Root protection area
- Tree protection barrier

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AR/60218 - Land at Evergreen Farm
 West Hoathly Road, East Grimstead
 West Sussex, RH19 4NE
Tree Protection Plan
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 Do not scale from drawing

Key

- Gas vent / Leachate collection trenches at 10m centres
- Surface Drains
- Collector pipe to collect leachate
- Steep Slope
- Shallow Slope

Tree Survey – 14th November 2018

Tree No	Species	Ht.	Stem dia.	RPA Rad	RPA Area	Crown spread N – S – E - W				CB	Age class	Phy con	Str con	ECR	Class	Observations & recommendations
T1	Beech	16	90	10.8	366	7	7	7	7	3	M	G	F	M	B	On bank. Twin stemmed at base.
T2	Silver birch	15	60	7.2	163	7	5	7	6	1	M	F	P	S	C	Fork at 1m. Deflected trunk.
T3	Oak	11	35	4.2	55	4	5	4	0	4	SM	G	G	L	C	Established semi-mature oak in group of four.
T4	Oak	11	35	4.2	55	3	5	4	4	3	SM	G	G	L	C	Established semi-mature oak in group of four.
T5	Oak	13	30	3.6	41	6	6	6	7	4	SM	G	G	L	B	Established semi-mature oak in group of four.
T6	Oak	11	30/30/ 30	10.8	366	7	2	8	7	3	SM	G	F	M	C	Established semi-mature oak in group of four.
G7	Leyland cypress hedge	4	15	1.8	10	As per plan – 2m wide				0.5	SM	G	G	L	C	Close pruned hedge.
G8	Oak & silver birch	<17	<45	5.4	92	As per plan				<4	SM	G	G	L	B	Collectively B grade. Good, young and semi mature grouping.
G9	Oak x 6	<18	<65	7.8	191	As per plan				<4	SM	G	G	L	B	Collectively B grade. Good, young and semi mature grouping.
G10	Oak x 2	<18	<60	7.2	163	As per plan				<6	SM	G	G	L	B	Pair of established oaks.
T11	Oak	16	55	6.6	137	8	6	7	6	4	SM	G	G	L	B	Good established oak.

Tree No	Species	Ht.	Stem dia.	RPA Rad	RPA Area	Crown spread N – S – E - W				CB	Age class	Phy con	Str con	ECR	Class	Observations & recommendations
G12	Oak & sycamore	<15	<55	6.6	137	As per plan				<4	SM	G	F	L	B	Smaller group. Only one single oak of any quality, the remainder being unexceptional.
G13	Oak & silver birch	<19	<50	6.0	113	As per plan				<6	SM	G	G	L	B	Collectively B Grade.
T14	Oak	14	45	5.4	92	8	8	8	7	4	SM	G	G	L	B	Good, free standing oak.
G15	Oak x 4	<18	50	6.0	113	As per plan				4	SM	G	G	L	B	Collectively B Grade.
T16	Oak	12	35	4.2	55	4	5	7	4	3	SM	G	F	L	C	Unexceptional semi mature oak.
T17	Oak	13	45	5.4	92	7	8	7	7	3	SM	G	G	L	B	Good, established tree.
T18	Oak	12	40	4.8	72	8	4	7	6	2	SM	G	F	L	B	Good, established tree, but younger than T17.
T19	Oak	15	70	8.4	222	7	8	4	8	2	SM	G	F	L	B	Established tree. Twin stemmed at base.
G20	Oak, willow, silver birch & beech	<16	<45	5.4	92	As per plan				Var	SM	G	F	L	C	Generally unexceptional group on top of bank. Poor beech at eastern end over track – fell.
G21	Oak & silver birch	<15	<45	5.4	92	As per plan				<4	SM	G	F	M	B	Collectively B Grade.
G22	Silver birch & holly	<13	<20	2.4	18	As per plan				Var	Y	F	F	M	C	Generally unexceptional, but good, dense screen to road.
G23	Mixed broadleaved	<8	<30	3.6	41	As per plan				Var	Y	F	P	M	C	Unexceptional trees on bank to north of upper entrance road.

Tree No	Species	Ht.	Stem dia.	RPA Rad	RPA Area	Crown spread N – S – E - W				CB	Age class	Phy con	Str con	ECR	Class	Observations & recommendations
G24	Mixed broadleaved	<11	<20	2.4	18	As per plan				Var	Y	F	P	M	C	Generally unexceptional group of young trees to south of upper entrance road.
G25	Oak x 3	<16	<65	7.8	191	As per plan – 8m				3	SM	G	G	L	B	Group of good established oaks.
T26	Sycamore	9	35	4.2	55	4	4	5	5	2	SM	P	P	M	C	Unexceptional young tree.
G27	Oak x 2	20	70	8.4	222	10	10	8	8	5	M	G	G	L	A	Collectively A Grade. Pair of oaks growing close together.
T28	Ash	16	45/30	9.0	255	5	6	7	5	10	SM	F	F	M	C	Generally unexceptional tree with twin stem @ base.
T29	Oak	14	40	4.8	72	2	6	2	6	6	SM	G	F	L	C	Generally unexceptional boundary tree.
T30	Oak	16	50	6.0	113	4	7	7	5	7	M	G	G	L	B	Good, established boundary tree.
T31	Ash	16	90	10.8	366	8	8	6	8	8	M	G	G	M	B	Established tree. Ivy to stem.
T32	Oak	15	50	6.0	113	7	5	7	2	3	SM	F	F	L	C	Good, young tree. Crown slightly deflected.
T33	Beech x 2	19	150	15.0	707	12	12	11	6	4	V	P	P	S	B	Large veteran tree, but significantly and fundamentally compromised with structural defects including torn branch wounds and fungal fruiting bodies at base. Second stem adjacent.
T34	Oak	15	70	8.4	222	6	6	6	7	4	M	G	G	L	B	Boundary tree. Twin stemmed at base.

Tree No	Species	Ht.	Stem dia.	RPA Rad	RPA Area	Crown spread N – S – E - W				CB	Age class	Phy con	Str con	ECR	Class	Observations & recommendations
T35	Oak	13	65	7.8	191	6	7	5	7	2	M	G	G	L	B	Good, established oak.
H36	Hazel, holly & mixed broadleaved	<10	<40	4.8	72	As per plan				Var	SM/M	G	F	L	B	Rather undefined hedge forming site boundary. Thin in places.
W37	Mixed broadleaved	<19	<80	9.6	290	As per plan				Var	Y/SM/M	F	F	L	B	Younger trees to interior of site. Larger trees to boundary.
W38	Mixed broadleaved woodland edge	<10	<30	3.6	41	As per plan				Var	SM	F	F	L	C	Strip of generally younger woodland edge trees.
W39	Oak	<19	<80	9.6	290	As per plan				Var	SM	G	G	L	A	Collectively A Grade. Oak standards in woodland setting. Rather sparse understory.
T40	Oak	17	65	7.8	191	6	6	5	6	6	SM	G	G	L	B	Good established tree.
T41	Oak	14	45	5.4	92	4	5	6	6	4	SM	G	G	L	C	Generally unexceptional young oak.
T42	Oak	19	70	8.4	222	10	10	10	10	4	M	G	G	L	A	Fine off-site tree with broad crown.
A43	Mixed broadleaved	<12	<20	2.4	18	As per plan				Var	Y	F	F	M	C	Area of young scrub growth.
T44	Oak	15	70	8.4	222	3	3	3	3	4	M	P	P	D	U	Off-site? Poor tree. Decay in stem. Fell.
H45	Mixed broadleaved	<11	<30	3.6	41	As per plan				Var	SM	F	F	M	C	Generally young and unexceptional planting.

Tree No	Species	Ht.	Stem dia.	RPA Rad	RPA Area	Crown spread N – S – E - W				CB	Age class	Phy con	Str con	ECR	Class	Observations & recommendations
G46	Alder & ash	<20	<45	5.4	92					Var	SM	P	P	D	U	Off-site? Dead semi mature alder. Semi-mature ash.
G47	Mixed broadleaved	<13	<30	3.6	41					Var	SM	F	F	M	C	Generally unexceptional scrubby linear group.
G48	Goat willow, sycamore & oak	<8	<30	3.6	41					Var	SM	P	P	S	C	Small area of predominately goat willow.
T49	Poplar	25	75	9.0	255	7	7	7	7	8	M	G	G	M	B	Large boundary tree.
G50	Oak	<16	<40	4.8	72					Var	SM	G	F	M	B	Group of generally young oaks.
H51	Cypress	<24	<50	6.0	113					-	SM	G	G	L	B	Prominent off-site cypress boundary trees.
G52	Goat willow	<8	<50	6.0	113					-	SM	F	F	M	C	Generally unexceptional goat willow.
G53	Cypress	<24	<40	4.8	72					-	SM	G	G	L	B	Prominent cypress boundary trees.
G54	Oak	<9	<30	3.6	41					<4	Y	F	F	M	C	Unexceptional group of young oaks adjacent to site entrance.
G55	Hazel, Willow & silver birch	<11	<25	3.0	28					<4	Y	F	F	M	C	Unexceptional group of young mixed broadleaves adjacent to site entrance.
H56	Cotoneaster	3	<10	1.2	5					-	SM	F	F	M	C	Dense, close pruned hedge.
H57	Thorn x 3	<3	<10	1.2	5					-	SM	F	F	M	C	3 x lengths of close pruned thorn hedge.

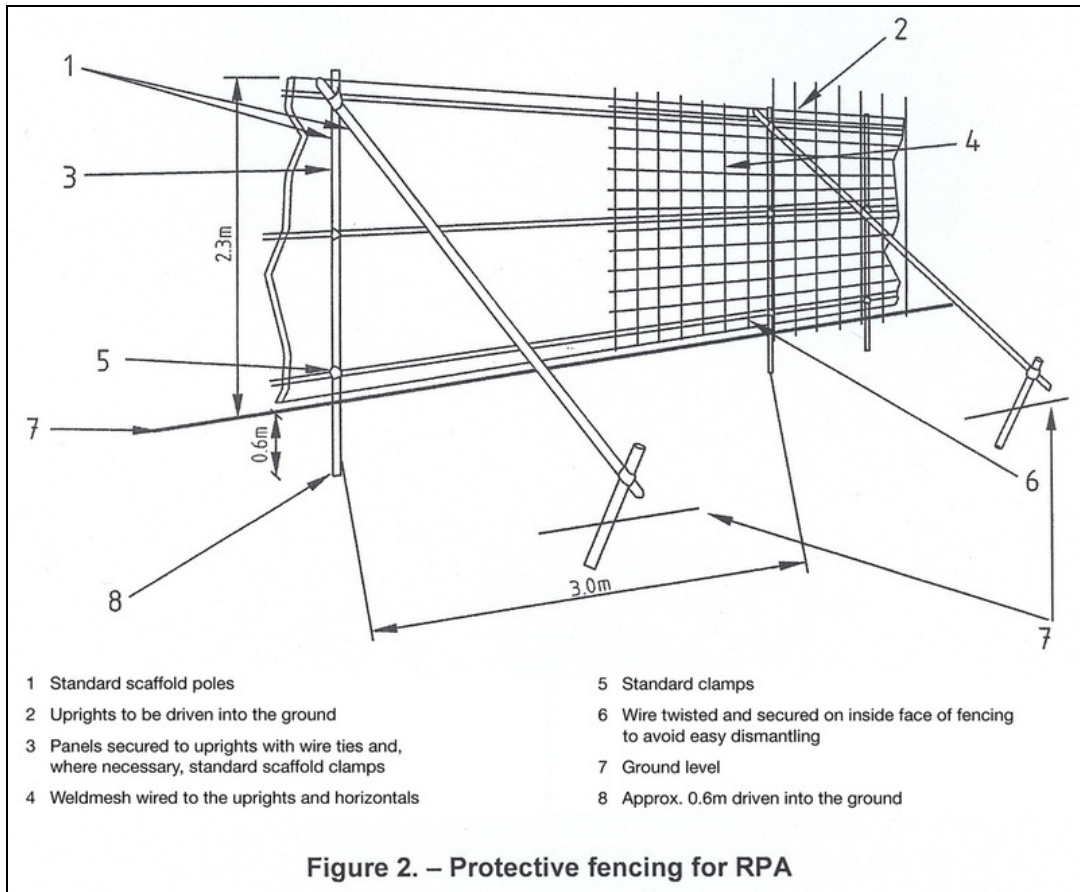
Survey sheet key

Tree No	Tree reference number as used in the report and survey plan T = Tree G= Group H = Hedge W = Woodland
Ht	Tree height in metres
Stem dia.	Stem diameter in millimetres Measured at 1.5 metres above ground level, or immediately above the root flare of multi-stemmed trees M = Multi-stemmed tree
Crown sp	Crown spread measured in metres from the stem to the four compass points
Crown break	Height of crown clearance above adjacent ground level, given in metres
Age class	Age class Y = Young: Staked or newly established tree SM = Semi-mature: An established tree at a stage of rapid growth EM = A tree nearing its ultimate canopy size for its situation M = Mature: A tree at its ultimate canopy size for its situation OM = Over mature: A mature tree smaller than its ultimate canopy size, often such trees are of great historical or ecological importance.
P. Con	Physiological condition of the tree expressed through an assessment of its general well-being G = Good, F = Fair, P = Poor, D = Dead
S. Con	Structural condition of the tree G = Good, F = Fair, P = Poor, D = Dangerous
R.C.	Estimated remaining contribution expressed in years D = <10, S = 10-20, M = 20-40, L = >40
BS Cat	Tree category graded as per the guidance given within Table 1 of BS 5837:2012 – See Appendix E A - Green = Trees of high quality with an estimated remaining life expectancy of at least 40+ years B - Blue = Trees of moderate quality with an estimated remaining life expectancy of at least 20 years C - Grey = Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm U – Red = Trees in such a condition that they cannot be realistically retained for longer than 10 years.
RPA ~ R	Root Protection Area radius, as measured in metres from the centre of the tree
RPA ~ A	Root Protection Area expressed in square metres

BS 5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and Definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	<ul style="list-style-type: none"> 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 (e.g. 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, or very low quality trees suppressing adjacent trees of better quality <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</p>			DARK RED
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Trees to be considered for retention				
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 of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular 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
Category B Trees of moderate quality 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 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 so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
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 landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

BS 5837:2012 - Tree protection fencing



On site examples of appropriate tree protection fencing installed as recommended within BS5837

Tree protection area warning sign



1.0 Scope of this report

- 1.1 I have been commissioned to produce base line survey data for trees, with a view to identifying constraints and opportunities for sustainable tree cover in the context of the development proposal for the site. The survey has been undertaken in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' and was made in the context of the site's current usage.
- 1.2 This report comprises the prerequisite information for the planning process recommended in BS 5837:2012
- The production of a Tree Survey
 - The production of an Arboricultural Impact Assessment
 - The production of a Tree Protection Plan if required.
 - The production of an Arboricultural Method Statement, if required.
- 1.3 The tree locations and canopy spreads are plotted on the indicative plans at Appendix A.
- 1.4 A detailed condition survey or hazard assessment of each tree has not been undertaken within the scope of this report. If a tree was noted as being in such a condition as to require more detailed assessment, then that observation is included in the tree survey notes at Appendix B.
- 1.5 The findings within this report have been made on the basis of evidence seen on the day of inspection. It should be understood that some indications of tree hazard, such as leaf appearance and density, fungal fruiting bodies, and specific pests and diseases, are only visible at specific times of the year. Should significant additional information become apparent following the submission of this report I would reserve the right to modify the conclusion made accordingly.
- 1.6 This report is valid until:
- The re-inspection dates given for any tree in the survey schedule
 - An episode of adverse weather conditions - for example winds over land measured at Beaufort scale force 8 or above.
 - For two years from the date of inspection.
- Whenever any of the above occurs first, the trees must be re-inspected, and any recommendations carried out. The presence of a hazard, the probability of the risk and the value of the target area all help to determine the frequency of re-inspection.
- 1.7 Some trees are protected in law. Prior to any works to trees being undertaken a check should be made with the relevant Local Authority to ensure that prior permission is not required with regard to Tree Preservation Orders (TPOs), Conservation Areas (CAs) or planning conditions that may affect the site or its trees.
- 1.8 Works to trees can also be regulated because of the risk of harming wildlife which may live on, or around them. Wild birds and bats are protected under the Wildlife and Countryside Act (1981) for example, and it is an offence to knowingly disturb their nests or roosts, while works to trees in proximity to badger setts may require a license.
- 1.9 Any tree works should be undertaken in accordance with British Standard 3998:2010 'Tree work - Recommendations'.

- 1.10 If hard surfacing needs to be installed close to trees the principles prescribed in BS 5837:2012 and modified specifications contained within Arboricultural Practice Note 12, 'Through the Trees to Development,' should be adopted.
- 1.11 My expertise is within the field of arboriculture and this report is limited to the arboricultural aspects of the site only. Any comments made with regard to other matters are from a lay person's point of view.

2.0 Survey method

- 2.1 Each tree was inspected from ground level, noting only external features and defects. The Visual Tree Assessment (VTA) method was used to carry out the tree survey; this is an industry standard, best practice method for assessing the health, stability and, to some degree, the amenity of urban trees. A tree may be physiologically healthy, with vigorous growth, but also exhibit mechanical defects and therefore be structurally weak, consequently presenting a risk. VTA involves an assessment of each tree's physiological and structural condition. It is carried out from ground level, with the aid of binoculars as necessary.
- 2.2 No climbing inspection was made of the crown, no excavation was made of the root system, and no specific decay detection equipment was used.
- 2.3 The following instruments were available to carry out the inspection:
- Diameter tape – To measure stem diameters
 - Nylon headed mallet – To sound trees for audible indications of decay
 - Steel probe – To indicate the presence and extent of cavities
 - Binoculars – To visually inspect above ground parts of the tree
- 2.4 No soil samples were taken, and no tissue samples were collected.
- 2.5 The following publications have been used to inform this survey, and the recommendations which follow from it:
1. British Standard 5837:2012
'Trees in relation to design, demolition and construction – Recommendations.'
 2. British Standard 3998:2010 'Tree work - Recommendations.'
 3. 'Diagnosis of ill-health in trees' by R.G. Strouts and T.G. Winter.
DoE booklet Research for Amenity Trees No. 2, 1994.
 4. 'The body language of trees - A handbook for failure analysis'
by C. Mattheck and H. Breloer.
DoE booklet Research for Amenity Trees No. 4, 1994.