BS5837 Tree Survey & Arboricultural Impact Assessment

Site: Ascot House, Hever Road, TN8 7NP

Ref: TCL-MA-AH AIA

Prepared for: Mr & Mrs Vermeulen

Prepared by: Tree Craft Ltd, Hillside Farm, Rushmore Hill, Knockholt, Kent, TN14 7NL.

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TREE CRAFT LTD.
ENVIRONMENTAL ARBORICULTURE
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Summary

This tree survey report relates to proposed construction works at Ascot House. The proposals are to extend the existing building on its north-western and north-eastern elevations, to construct a new garage to the north of the existing driveway, and to construct a new studio outbuilding close to the north-eastern corner of the plot.

This report provides information and advice on the likely impact of the development proposals on the affected trees, and, in accordance with British Standard 5837 (trees in relation to design, development, and construction) recommends appropriate measures to be taken in order to minimise the effect of development works on the trees.

The table below summarises the trees and hedges surveyed, their retention categories, and the numbers to be retained and removed:

	Total	Retained	Removed
Category A trees	1	1	0
Category B trees	3	3	2
Category B groups	1	1	0
Category C trees	21	15	6
Category U trees	1	1	0

A check using Sevenoaks District Council's interactive mapping service has revealed that no part of the site is within a Conservation Area, nor is any tree within the site subject to a Tree Preservation Order.

While this information is correct at the time of writing, it presumes the reliability of the mapping service and is subject to change without notice. It is therefore the responsibility of any contractor working on these trees to undertake their own statutory checks.

1. Introduction

1.1 **Instruction:** Tree Craft Ltd. have been instructed by Mr & Mrs Vermeulen to carry out a tree survey and provide reports with regard to the development proposals outlined above.

1.2 **Scope of the report:** we are to survey, independently of the development proposals, all trees which may be affected by them, and:

- Record relevant information about the trees, in order to inform the design process.
- Provide an arboricultural impact assessment evaluating direct and indirect effect of the development proposals on retained trees and any impact which retained trees will have on the development, as well as recommending appropriate mitigation and protection measures.

1.3 **Documents provided:** the plans attached are derived from a topographical survey of the existing site, and from a proposed site layout ('201_P3_Proposed Block Plan'), each provided by Miller Architects on 9th March and 11th June 2021, respectively.

2. Site assessment and observations

2.1 Site visit: A site visit and tree inspection was undertaken on Thursday 11th March 2021. The weather was overcast, with showers. Deciduous trees were not in leaf at the time of the inspection. Height and crown spread measurements were taken using a laser rangefinder, while stem diameters were measured using a forestry diameter tape. Where access to trees was obstructed or obscured, or if they were on neighbouring land, stem diameter measurements were estimated. Heights and crown spreads, however, were still measured accurately as far as access/sighting allowed.

2.2 Site description: The site currently comprises a detached property to the south of Hever Road and accessed by a long private driveway. The existing building is orientated northwest-southeast, with a large gravel driveway to the west, a mature garden to the east, and a lake and garden area to the south. To the north of the plot is a paddock, which slopes downwards to the north.

3 – Tree survey

3.1 Tree survey and constraints: The results of the tree survey are shown in the tree survey plan and schedule (**Appendix B)** and the tree protection plan **(Appendix C)**. The number of trees in each retention category can be seen in the summary table at the beginning of this report.

3.1.1. The below ground constraints are generally summarised as the root protection areas (RPA). The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of the two calculation methods below should be used where there are either 2 - 5 stems or 5 or more stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided by Annex D of BS5837:2012.

3.1.2. The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s), in order to avoid soil compaction, changes in soil levels, or soil contamination, any of which could alter the tree(s) condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.

3.2 Retention categories: As stipulated in BS 5837, each tree has been allocated to one of four categories (A, B, C or U), which reflects its suitability as a material constraint on development. Whilst trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of low quality or of only limited or short-term potential, will not normally be considered necessary where they impose a significant constraint on development. Furthermore, BS 5837 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature "need not necessarily be a significant constraint on the site's potential".

BS5837:2012 sets out the methodology for surveying trees on potential development sites in order to identify them within a prioritised system of retention categories, as summarised below:

A Category	Trees of high quality and amenity value in such a condition at the time of the surve as to be able to make a significant amenity contribution for a minimum of 40 years.
B Category	Trees of moderate quality and amenity value in such a condition at the time of the survey as to make a significant amenity contribution for a minimum of 20 years.
C Category	Trees of low quality and amenity value in adequate condition at the time of the survey to make some amenity contribution for a minimum of 10 years, or young trees with a stem diameter less than 150 mm measured at 1.5 meters above ground level
U Category	Trees in such a condition that any existing value would be lost within 10 years. Such trees do not necessarily need to be removed as part of the project (unless for safety reasons) but do not impose any constraints on the project. For this reason, and in accordance with BS5837 practices, Category U trees, hedges, and groups are not marked with Root Protection Areas on the Tree Protection Plan.

Retention categories A, B and C are sub-divided into sub-categories 1 – 3, as summarised below:

Subcategory 1	Arboricultural value;
Subcategory 2	Landscaping value
Subcategory 3	Cultural and conservation value

The Root Protection Area (RPA) of each tree was determined using the calculation methods detailed in BS 5837: 2012 and plotted as a polygon which centres on the base of the stem. For groups, the RPAs have been calculated on the largest stem diameter with the group. For hedges, the RPAs have been extended to 1 metre beyond the crown spreads of the widest cardinal points. Where a tree crown extends beyond the RPA, allowance has been made to increase the extent of the RPA to include the canopy where relevant.

4.0 – Arboricultural Impact Assessment

4.1 Tree survey plan: The tree survey plan **(Appendix B)** is based on tree survey data recorded and plotted onto a topographical plan of the current site layout, and shows the existing trees, numbered and categorised in accordance with BS 5837:2012. Details of each tree surveyed are included in the tree schedule, part of Appendix B.

4.1.1 The Tree Protection Plan (**Appendix C**) is based on the tree survey data overlaid onto the proposed layout plan and shows the extent of the RPAs of the surveyed trees. Below ground constraints are represented by the RPA. The above ground constraints arise from the current and ultimate height and spread of the trees. An assessment of the Tree Protection Plan has determined the likely impact of the development proposals on the trees and vice-versa.

4.2 Trees **to be removed:** the current proposal requires the removal of six trees, all of retention category C, in order to accommodate the garage building and driveway section, and the new studio building. The extensions to the existing house building do not require the removal or pruning of any trees.

4.2.1 Tree safety works: no tree safety works were identified at the time of the survey. However, some crown lifting works are recommended to G2 and T26, where their low canopies currently overhang the driveway. Further details of the recommended works are included within the tree survey schedule at **Appendix B** and the tree works schedule at **Appendix E**.

4.3 Incursions within the RPAs of retained trees: the proposed development works will result in an incursion into the RPA of one retained tree, as detailed below:

Works	**Trees/Hedges Affected**
Construction of new studio building	T3 (Category C)

The above incursion represents an area of approximately 1.1m^2, on the outer, northern edge of the 71.97m^2 RPA – approximately 1.57% of the total RPA. This can therefore be considered an extremely minor incursion, particularly as it is 3 metres outside the canopy line of the tree which, as a semi-mature specimen of a species with moderate tolerance to minor ground disturbance, is not at high risk of physiological damage. As the minor incursion is at the very outer edge of the RPA, it is also unlikely that major roots will be discovered or disturbed in the course of the work. Any minor roots which must be removed will be carefully pruned using sharp bypass secateurs or a pruning saw; due to the small size and the location of the incursion area, such minor root pruning is not expected to have any detrimental effect on the tree. Provided, therefore, that protection measures outlined in this report are followed (particularly with regard to use of hand tools only within the RPA, and avoiding soil contamination), the work will cause very little disturbance to the tree. This incursion should therefore have no negative impact on the condition and/or longevity of T3.

4.4 Underground apparatus: details of the proposed underground drainage and other underground apparatus routes for the two new outbuildings were not available at time of writing this report. However, it is likely that services for the garage will be extended into its footprint from beneath the existing driveway, to the south, which will avoid the RPAs of all retained trees. If this is the case, there will not be adverse impact on any retained trees. Underground service routes to the new studio must following a path similar to the site access route marked on the Tree Protection Plan at **Appendix C**, and avoid all Root Protection Areas. Any plans for other service routes through the site must be analysed at the planning stage by the project arboriculturist if they may infringe the RPA of any retained tree.

4.5 Site access arrangements and compound/storage area: site access for construction plant and vehicles is to be via the existing driveway, which is to be retained, and (for the studio building) via the existing garden entrance to the north of the current building and then utilising the approximate access route marked on the Tree Protection Plan.

At the time of writing this report, the location of the site storage area had not been finalised. However, there is sufficient space within the site, particularly on the existing driveway to accommodate storage without infringing the RPAs of the retained trees. Any site facilities and storage areas must be located outside all RPAs and all materials (especially fuel and cement) stored as far away from any RPAs as possible to reduce the risk of soil contamination from spillages.

4.6 Crown shadow: Shading by trees affects buildings and open spaces. This can be a problem where trees shade rooms to a building that require natural light. However, shading can also be desirable to reduce glare, solar heating or to provide cool place in the garden during hot weather. The shade cast by trees is therefore an important consideration in the design of the development.

4.6.1 In this case, due to the orientation of the site and the position of the retained trees, significant shading issues are not anticipated. Some afternoon shading of the garage will take place due to G2 and T26, but the usage of the building prevents this from being an issue.

4.7 Tree works: recommended tree works, and trees which are to be removed as part of the project, are listed in the Tree Works Schedule, included as **Appendix E**.

4.8 Protective fencing: Protective fencing shall be erected in the locations shown on the Tree Protection Plan (**Appendix C**) to provide construction exclusion zones within the RPAs of the retained trees on site. The fencing shall be 'fit for purpose' and preferably as prescribed in section 6.2 (Figure 2) of British Standard 5837: 2012 (e.g. metal welded mesh panels secured with scaffold poles), as illustrated on the copy extract (**Appendix D**).

4.8.1 The RPAs should be regarded as sacrosanct and the fencing should be installed prior to construction works, and plant and machinery arriving on site. The fencing should remain intact throughout the duration of the development and only be removed upon completion.

4.9 General protection measures for retained trees: It is important that measures for protection are in place throughout the development and for as long as a risk of damage remains. Particular care and planning is necessary with regard to the operation of construction vehicles and machinery to ensure all plant movements and operations will not impact on any retained trees.

4.9.1 Where it is necessary to carry out work within the RPAs of the retained tree T3, care should be taken to preserve and work around roots greater than 25mm in diameter, and clusters of smaller roots where practicable.

If, however, it is necessary to sever roots greater than 25mm in diameter, further advice must be sought from the Project Arboriculturist before proceeding. Where smaller roots must be severed, they should be cut back cleanly using secateurs or a sharp pruning saw. The presence of major roots and/or root clusters within the small incursion area is, however, considered unlikely.

4.9.2 During construction, no materials shall be stored or dumped and no vehicular or plant movement will be permitted within the designated exclusion zones (inside the protective fencing), in order to minimise the risk of damage to the trees from soil compaction. If any such compaction has occurred advice should be sought from the Project Arboriculturist.

4.9.3 All cement mixing and washing points for equipment and vehicles and fuel storage areas shall be outside the designated exclusion zones. No discharge of potential contaminants shall occur within the RPA of a retained tree or where there is a risk of run off into the RPA.

4.9.4 Fires on site shall be avoided if possible. Where they are unavoidable, they shall be located far enough away from all trees and hedges to prevent any potential risk of damage to the trees.

4.10. Tree planting: details of any proposed tree planting were not available at the time of writing. If planting is to take place, consideration should be given to the planting of native species suitable for the location and site conditions. Ideally, all tree planting should be located outside the RPAs of the retained trees. However, if this is not possible, all cultivation and planting operations within the RPAs should be undertaken carefully by hand to avoid damage to the tree roots. A rotavator must not be used within the RPAs. Care must also be taken to ensure that there are no significant changes to existing ground levels within the RPAs.

4.11 Impact on local amenity and ecology: The trees and shrubs to be removed are young or semi-mature specimens, and not of high quality or retention value. Trees T17-21 (inclusive) are all exhibiting crown suppression due to their close proximity to one another; as semi-mature trees, they are therefore not well-suited to longer-term retention as they have insufficient space to reach their ultimate size. Care has been taken to site the new garage away from the higher-quality trees (T22, T24, T26) at the western end of the tree belt. T12 is not of significant size (4 metres' height) or retention value and as such its removal will not be detrimental to the site, particularly as other small trees and shrubs will be retained nearby. The veteran oak, T1, which is of especially high value, is well-removed from all construction areas and will not be impacted by any of the proposed works. Provided that the

recommendations in this report for the protection of the retained trees are followed, the project will therefore not have any detrimental impact on the local amenity from an arboricultural perspective, or affect the health and/or longevity of the retained trees.

5.0 References

- British Standards Institution (2012) BS 5837: Trees in relation to design, demolition and construction – Recommendations
- National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007)
- British Standard 3998:2010 *'Tree work – Recommendations'*
- The Town and Country Planning Act 1990
- The Town and Country Planning (Tree Preservation) (England) Regulations 2012
- "The Body Language of Trees" by Claus Mattheck & Helge Breloer
- "Principles of Tree Hazard Assessment & Management" by David Lonsdale
- British Standard 5837: 2012 "Trees in Relation to Construction"
- British Standard BS3998: 2010 Tree Work – Recommendations

6.0 Caveats and limitations of report

The limitations detailed below apply to this report;

- The survey and this report are concerned with the arboricultural aspects of the site only.
- The survey is restricted to trees that may be affected by the proposed development, regardless of whether they are within or without the site boundaries.
- It is based on a ground level tree assessment and examination of external features only – described as the 'Visual Tree Assessment' method expounded by Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994).
- Only trees of significant stature that were included in the supplied topographical survey were surveyed. In general, trees with a stem diameter at 1.5m above ground level of less than 75mm have been excluded unless they have particular merit that warrants comment. In general, woody shrub species are not included.
- No plant tissue samples were taken and no internal investigation of the trees was carried out. No soil samples were taken or soil analyses were carried out. The risk of tree-related subsidence to structures has not been assessed.
- The tree survey recommendations are valid for one year.
- No specific assessment of wildlife habitats has been carried out and this report does not consider these aspects.
- The inspection of the trees for the purposes of assessing their condition and work requirements is made on the basis that they will be annually inspected in the future to identify any changes in condition and review the original recommendations. For these reasons, the tree assessment advice only remains valid for one year from the date that the trees were last inspected.
- The arboricultural impact assessment has been based on the detailed site layout and design information provided by the client
- It is assumed that foundations will be constructed in accordance with National House Building Council Standards 2011, Part 4.2 'Building Near Trees'
- The health and condition of trees, as living organisms, may change rapidly, particularly as a result of unpredictable climatic events or human interference. The condition assessment of the trees is based on factors evident at time of inspection, and the inspector's interpretation of these factors. Subsequent significant meteorological events or changes to the site (especially with regard to the soil) may affect the stability and conditions of the trees and therefore the validity of this report.

7.0 Review

Completed by		
Name	**Signed**	**Date**
Anthony McCarthy	[redacted]	22.06.2021
Reviewed by		
Name	**Signed**	**Date**
R. Arnold	[redacted]	

Appendix A: Survey Methodology

- The trees on the site were originally surveyed without reference to site layout.

- The position of each tree was originally plotted using GPS onto the supplied topographical plan. Where the tree location did not match that marked on the topographical plan, precise measurements from reference points on site were used in conjunction with the GPS in order to gain an accurate location.

- Small trees with a stem diameter less than 75mm were not surveyed.

- Each individual tree has been given a tree identification number. Metal tags have not been used for this survey. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendices B-D.

- The tree species have been recorded with common names.

- All tree heights and canopy spreads have been measured using a laser rangefinder. Tree heights are given in metres.

- All stem diameters were measured at 1.5 metres above ground level using a diameter tape, and are given in millimetres.

- The canopy heights are given in metres and are a measure of the height of the main canopy above ground level.

- With regard to age class the following approximations have been used:

Young	Out-planted trees that have not yet established
Early Mature	Established trees up to 1/3 of expected height and crown
Semi-Mature	Early mature: Between 1/3 and 2/3 of expected height and crown
Mature	Between 2/3 and full expected height and crown
Fully Mature	Full expected height and crown
Over Mature	Crown beginning to break-up and decrease in size

- The structural condition of the trees has been assessed and is summarised as:

Good	No defects apparent
Fair	Minor defects, unlikely to require remedial work in the short-term
Poor	Major defects, likely requiring significant remedial work in the short-term

- The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:

Good	Healthy and with no symptoms of significant disease.
Fair	Disease/stress present or vitality is slightly impaired.
Poor	Disease/stress present and vitality significantly impaired
Dead	

- The crown, main stem(s), and roots (where visible) of each tree or group were individually assessed.

- General comments have been made where appropriate.

- Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of each tree or group's useful remaining life expectancy

Hillside Farm
Rushmore Hill
Knockholt
TN14 7NL

TREE CRAFT LTD.

01732 641492
advice@treecraft.co.uk

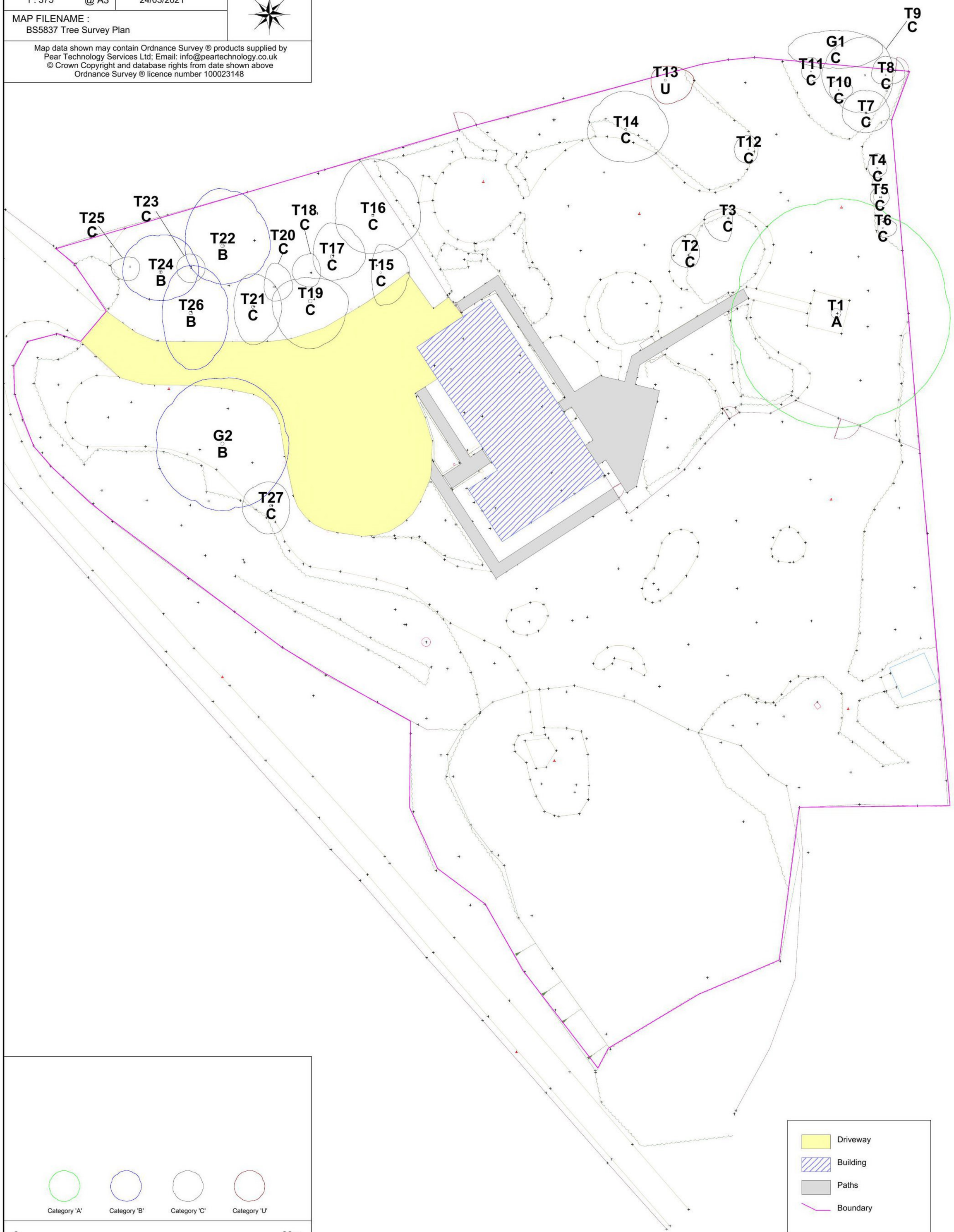
Ascot House

SCALE : 1 : 375 @ A3

DATE : 24/03/2021

MAP FILENAME : BS5837 Tree Survey Plan

N



Category 'A' Category 'B' Category 'C' Category 'U'

0 30m

Driveway
Building
Paths
Boundary

BS5837:2012 Tree Survey

Client: Miller Architects
Project: Ascot House, Hever Road, TN8 7NP
Survey Date: 11/03/2021
Surveyor: Anthony McCarthy

Tree Craft Ltd
Unit 16, Hillside Farm
Rushmore Hill
Knockholt
Kent
TN14 7NL
consultancy@treecraft.co.uk

Tree and Tag No / Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations / Survey Comment	Cat ERC
G1											
Mixed species	8	1	160	N 2 E 5 S 2 W 5	2 2 2 2	SM	A: 11.6 R: 1.92	Good	C: Good S: Good B: Good	No action :: No action Group of 2 no. Himalayan birch and 1 no. paper birch, to north of boundary fence. Eastern tree bifurcated at 2.5 metres.	C.1 10 to 20 yrs
G2											
Corsican pine *Pinus nigra v maritima*	12	1	375	N 7 E 7 S 7 W 7	1 1 5 5	SM	A: 63.6 R: 4.49	Good	C: Good S: Fair B: Good	Raise low canopy :: To 5.0m Group of 3 no. trees to west of driveway, growing as a single crown. Low, eastern and northeastern branches overhanging edge of driveway.	B.1 20 to 40 yrs
T1											
Common Oak *Quercus robur*	18	1	1050	N 12 E 12 S 12 W 11	2 3 3 2.5	M	A: 498.8 R: 12.6	Good	C: Good S: Good B: Fair	No action :: No action High-quality, ancient tree with very good form. Minor decay between buttresses on southern and south-eastern sides of base, typical for species and age class (no decay indicated in buttresses). Dead wood in crown, typical for species.	A.1 >40 yrs
T2											
Purple Crab *Malus x purpurea 'Neville Copeman'*	4	2	119 (Eq)	N 2 E 1 S 1.5 W 2	1 1 1 1	Y	A: 6.4 R: 1.42	Good	C: Fair S: Good B: Good	No action :: No action North-eastern stem previously topped.	C.1 10 to 20 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m^2) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T3											
Field Maple *Acer campestre*	4.5	8	354 (Eq)	N 1 E 0.5 S 2.5 W 2.5	3 2 4 2	SM	A: 56.6 R: 4.24	Good	C: Poor S: Fair B: Fair	No action :: No action Multi-stemmed tree, with crown break at 0.2 metres. Poor crown form - northern and north-western branches previously removed, leaving remainder unbalanced.	C.1 10 to 20 yrs
T4											
Callery pear *Pyrus calleryana 'Chanticleer'*	6	1	150	N 1.5 E 1 S 1 W 1	1 1 1 1	SM	A: 10.2 R: 1.8	Good	C: Good S: Poor B: Fair	No action :: No action Main stem trifurcated at 1.5 metres, with 2 no. weak, codominant fork unions.	C.1 10 to 20 yrs
T5											
Callery pear *Pyrus calleryana 'Chanticleer'*	6	1	130	N 1 E 1 S 1 W 1	 	SM	A: 7.6 R: 1.55	Good	C: Good S: Good B: Good	No action :: No action No significant, visible defects.	C.1 10 to 20 yrs
T6											
Callery pear *Pyrus calleryana 'Chanticleer'*	6	1	140	N 1 E 1.5 S 1 W 0.5	1 1 1 1	SM	A: 8.9 R: 1.68	Good	C: Good S: Poor B: Good	No action :: No action Weak, codominant fork union at 1.5 metres.	C.1 10 to 20 yrs
T7											
Bird Cherry *Prunus padus*	5	1	130	N 2.5 E 2.5 S 2 W 2.5	4 3 2 2	SM	A: 7.6 R: 1.55	Good	C: Fair S: Fair B: Good	No action :: No action Codominant fork union at 1.5 metres. Crown suppressed on north-eastern side.	C.1 10 to 20 yrs
T8											
Common Hawthorn *Crataegus monogyna*	5	1	125	N 2 E 2 S 1 W 1.5	1 2 1 1	SM	A: 7.1 R: 1.5	Fair	C: Fair S: Fair B: Good	No action :: No action Crown suppressed on southern and western sides.	C.1 10 to 20 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	Stems Ø (mm)	Crown Spread (m)	Crown Clear (m)	Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T9											
Bird Cherry *Prunus padus*	7	2	177 (Eq)	N 4 E 3 S 4 W 4.5	2 4 1.5 2.5	SM	A: 14.1 R: 2.11	Good	C: Fair S: Fair B: Fair	No action :: No action Codominant union at 1.2 metres, and slight suppression in southern side of crown. Surrounded by understory of previously topped Portuguese laurel and other small shrubs.	C.1 10 to 20 yrs
T10											
Himalayan Birch *Betula utilis*	7	1	120	N 1 E 1.5 S 1 W 1	5 3.5 4 5	SM	A: 6.5 R: 1.43	Good	C: Good S: Fair B: Good	No action :: No action Main stem bifurcated at 2.5 metres.	C.1 10 to 20 yrs
T11											
Himalayan Birch *Betula utilis*	7	1	125	N 1.5 E 1 S 1 W 1	2.5 3 2.5 1.5	SM	A: 7.1 R: 1.5	Good	C: Good S: Fair B: Good	No action :: No action Main stem bifurcated at 3 metres.	C.1 10 to 20 yrs
T12											
Cockspur Thorn *Crataegus crus-galli*	4	1	115	N 1.5 E 1 S 1.5 W 1.5	2 2 1.5 1.5	SM	A: 6 R: 1.38	Good	C: Good S: Fair B: Fair	No action :: No action Lower stem swept towards north-east, with correction of form in upper crown.	C.1 10 to 20 yrs
T13											
Ash *Fraxinus Spp.*	9	1	240	N 1.5 E 3 S 2.5 W 1.5	6 6 6 8	SM	A: 26.1 R: 2.88	Fair	C: Poor S: Poor B: Fair	No action :: No action Large tear wound from 1-1.5 metres, at failed codominant union. Clear stem to 6 metres.	U n/a
T14											
Small-Leafed Lime *Tilia cordata*	9	1	250	N 4 E 4.5 S 3.5 W 4	2 2 2 2	SM	A: 28.3 R: 3	Fair	C: Fair S: Fair B: Good	No action :: No action Weak fork union with western branch, at 2.5 metres. Understory of mixed, small shrubs.	C.1 10 to 20 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	 Ø (mm)	Crown Spread (m)	 Clear (m)	Age	RP A (m^2) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T15											
Indian Horse Chestnut *Aesculus indica*	8	1	185	N 3 E 3 S 3.5 W 1	1.5 1.5 1 2	SM	A: 15.5 R: 2.22	Fair	C: Fair S: Fair B: Fair	No action :: No action Crown slightly-sparse, and suppressed on western side.	C.1 10 to 20 yrs
T16											
Wild Cherry *Prunus avium*	10	1	230	N 6 E 5 S 4 W 4	1.5 1.5 1.5 1	SM	A: 23.9 R: 2.75	Fair	C: Fair S: Good B: Good	No action :: No action Dead leaves retained over winter, symptomatic of minor fungal infection. Crown heavily suppressed on western side.	C.1 10 to 20 yrs
T17											
Corsican Pine *Pinus nigra var.maritima*	11	1	360	N 3.5 E 3.5 S 2.5 W 2	4 4 4 4	SM	A: 58.6 R: 4.31	Fair	C: Fair S: Fair B: Fair	No action :: No action Lower stem swept to 3 metres. Crown heavily suppressed on southern and western sides by adjacent trees.	C.1 10 to 20 yrs
T18											
English Elm *Ulmus procera*	11	1	150	N 2 E 1 S 1.5 W 2	2.5 1.5 1 1	SM	A: 10.2 R: 1.8	Fair	C: Fair S: Good B: Good	No action :: No action Crown heavily suppressed on southern and eastern sides.	C.1 n/a
T19											
Corsican Pine *Pinus nigra var.maritima*	12	2	423 (Eq)	N 2.5 E 4 S 5 W 4	6 2 2 2	SM	A: 80.8 R: 5.07	Fair	C: Fair S: Fair B: Good	No action :: No action Main stem bifurcated at 1 metre. Crown slightly sparse, with moderate quantity of dead wood, and suppressed on northern side.	C.1 10 to 20 yrs
T20											
English Elm *Ulmus procera*	11	1	150	N 2.5 E 2 S 1.5 W 1	1 1 1 1	SM	A: 10.2 R: 1.8	Fair	C: Fair S: Poor B: Fair	No action :: No action Weak, codominant fork union in main stem, at 3.5 metres. Crown suppressed on southern and western sides.	C.1 n/a

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	 Ø (mm)	Crown Spread (m)	 Clear (m)	Age	RP A (m^2) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T21											
Corsican Pine *Pinus nigra var.maritima*	10	1	330	N 3.5 E 3 S 4 W 2	4 2 2 3	SM	A: 49.3 R: 3.96	Fair	C: Fair S: Good B: Good	No action :: No action Western side of crown suppressed, with moderate quantity of dead wood present.	C.1 10 to 20 yrs
T22											
Corsican Pine *Pinus nigra var.maritima*	13	1	395	N 6 E 5 S 4 W 4	1.5 2 3 2	SM	A: 70.6 R: 4.74	Good	C: Good S: Fair B: Good	No action :: No action Main stem trifurcated at 4 metres. Slight suppression in western side of crown.	B.1 20 to 40 yrs
T23											
English Elm *Ulmus procera*	9	1	135	N 1.5 E 1.5 S 1.5 W 1.5	1 1 1 1	SM	A: 8.2 R: 1.61	Fair	C: Fair S: Fair B: Fair	No action :: No action Crown suppressed on western side.	C.1 n/a
T24											
Corsican Pine *Pinus nigra var.maritima*	12	1	370	N 4 E 4 S 3 W 4	2 2 4 2	SM	A: 61.9 R: 4.43	Fair	C: Good S: Good B: Good	No action :: No action Crown slightly sparse, and suppressed on lower, south-western side.	B.1 20 to 40 yrs
T25											
English Elm *Ulmus procera*	10	1	150	N 1 E 1 S 1.5 W 2	1 2 2 1	SM	A: 10.2 R: 1.8	Fair	C: Fair S: Fair B: Fair	No action :: No action Crown suppressed on north-eastern side.	C.1 n/a
T26											
Corsican Pine *Pinus nigra var.maritima*	12	1	420	N 5 E 4 S 6 W 3	5 4 2 1	SM	A: 79.8 R: 5.03	Fair	C: Fair S: Good B: Good	Raise low canopy :: To 5.0m Crown slightly-sparse, and suppressed on north-western side. Low southern branches overhanging edge of driveway.	B.1 20 to 40 yrs

Age Classifications: N Newly planted; Y Young; SM Semi-mature; EM Early Mature; M Mature; OM Over Mature

Condition: C Crown; S Stem; B Basal area

Stems: Ø Diameter; (Eq) Equivalent stem diameter using BS5837:2012 definition

ERC: Estimated Remaining Contributio

Tree and Tag No Species	Hght (m)	Stems No	 Ø (mm)	Crown Spread (m)	 Clear (m)	Age	RP A (m^2) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations Survey Comment	Cat ERC
T27											
Corsican Pine *Pinus nigra var.maritima*	10	1	290	N 2.5 E 2 S 3 W 3	5 5 5 5	SM	A: 38.1 R: 3.48	Fair	C: Fair S: Good B: Good	No action :: No action Slight suppression of crown on northern side.	C.1 10 to 20 yrs

Age Classifications:	N	Newly planted	EM	Early Mature	**Condition:**	C	Crown	**Stems:**	Ø Diameter
	Y	Young	M	Mature		S	Stem		(Eq) Equivalent stem diameter using BS5837:2012 definition
	SM	Semi-mature	OM	Over Mature		B	Basal area	**ERC:**	Estimated Remaining Contributio

Hillside Farm
Rushmore Hill
Knockholt
TN14 7NL

TREE CRAFT LTD.

01732 641492
advice@treecraft.co.uk

Ascot House

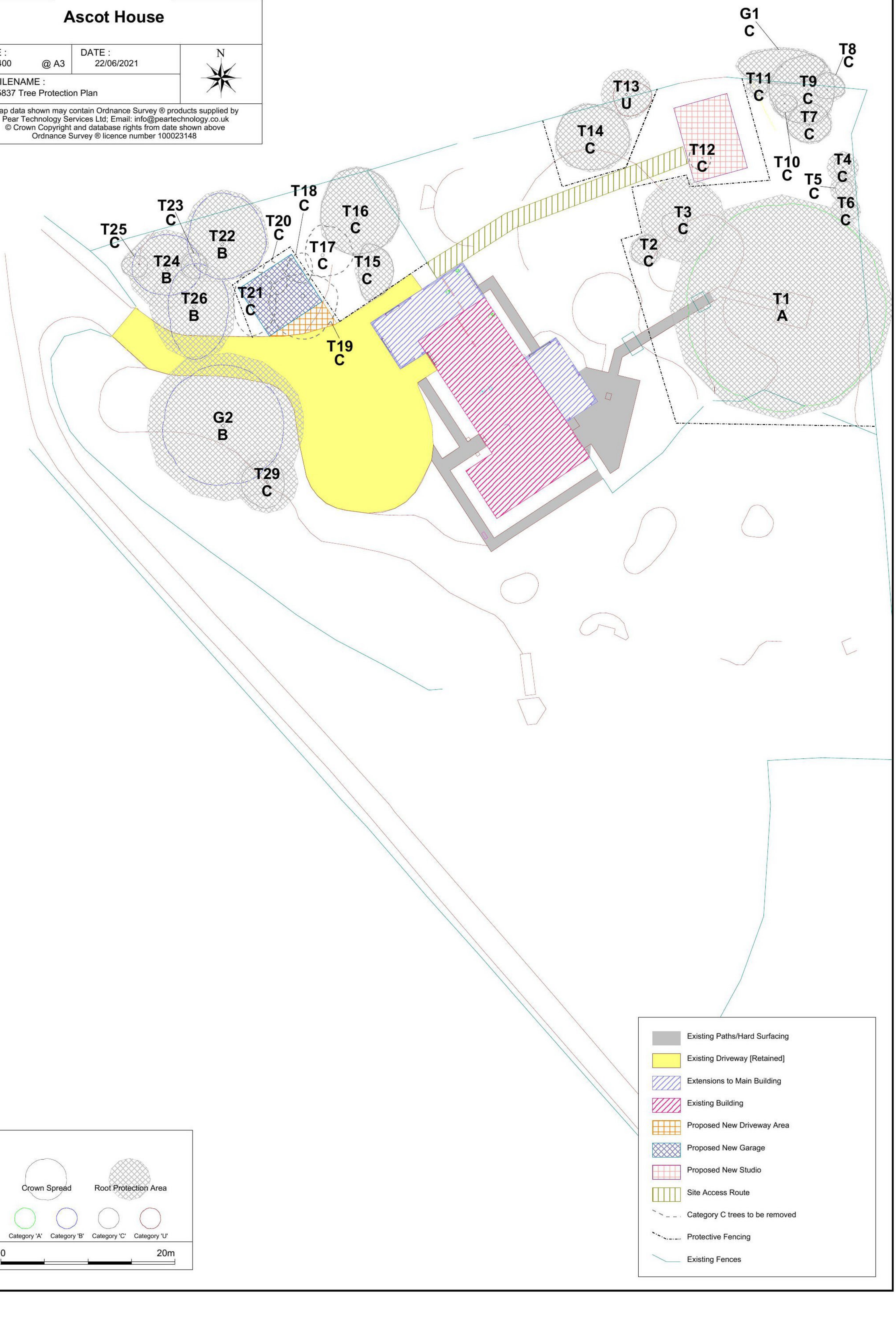
Appendix C

SCALE : 1 : 400 @ A3

DATE : 22/06/2021

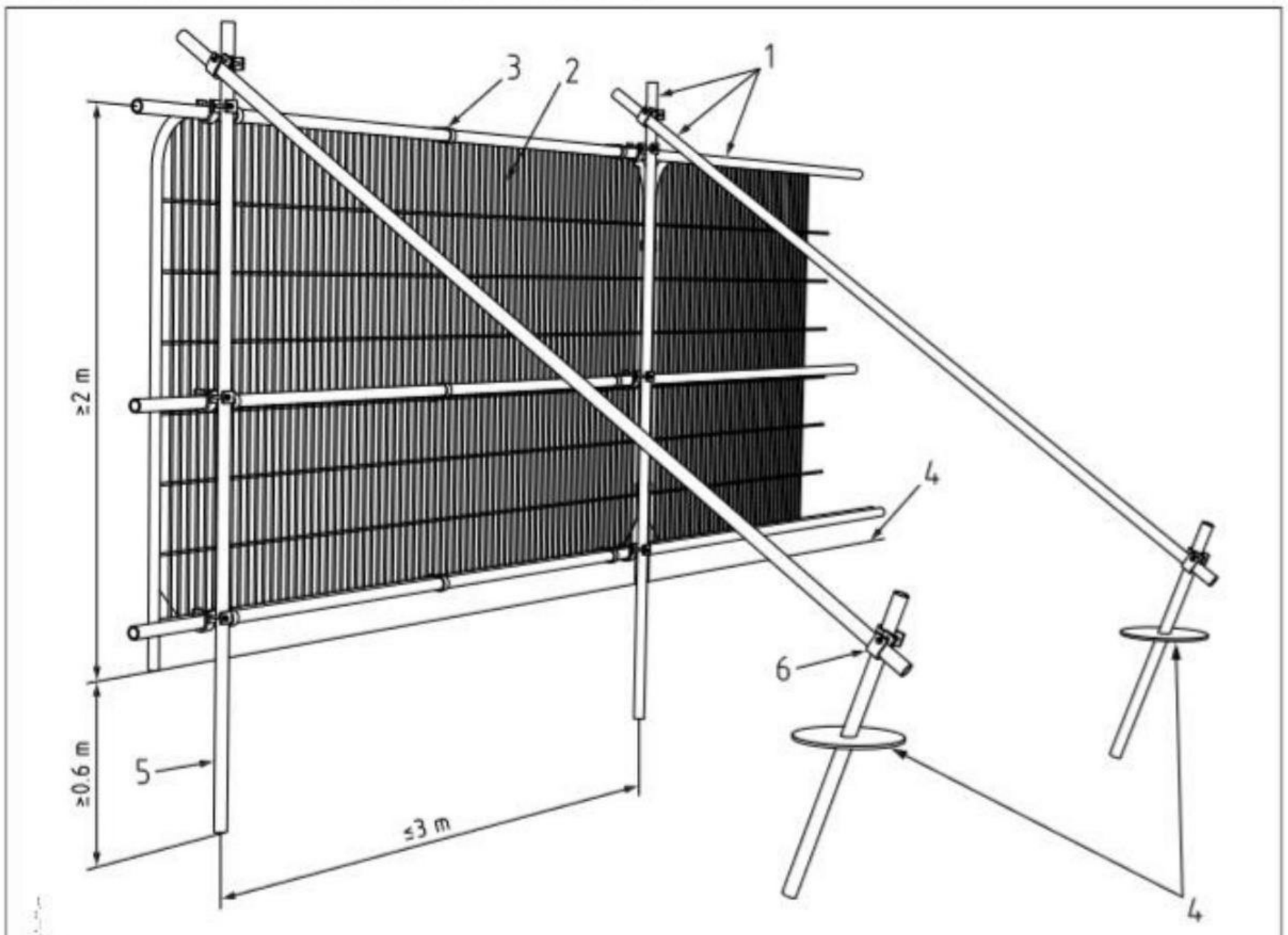
N

MAP FILENAME : BS5837 Tree Protection Plan



APPENDIX F – PROTECTIVE FENCING

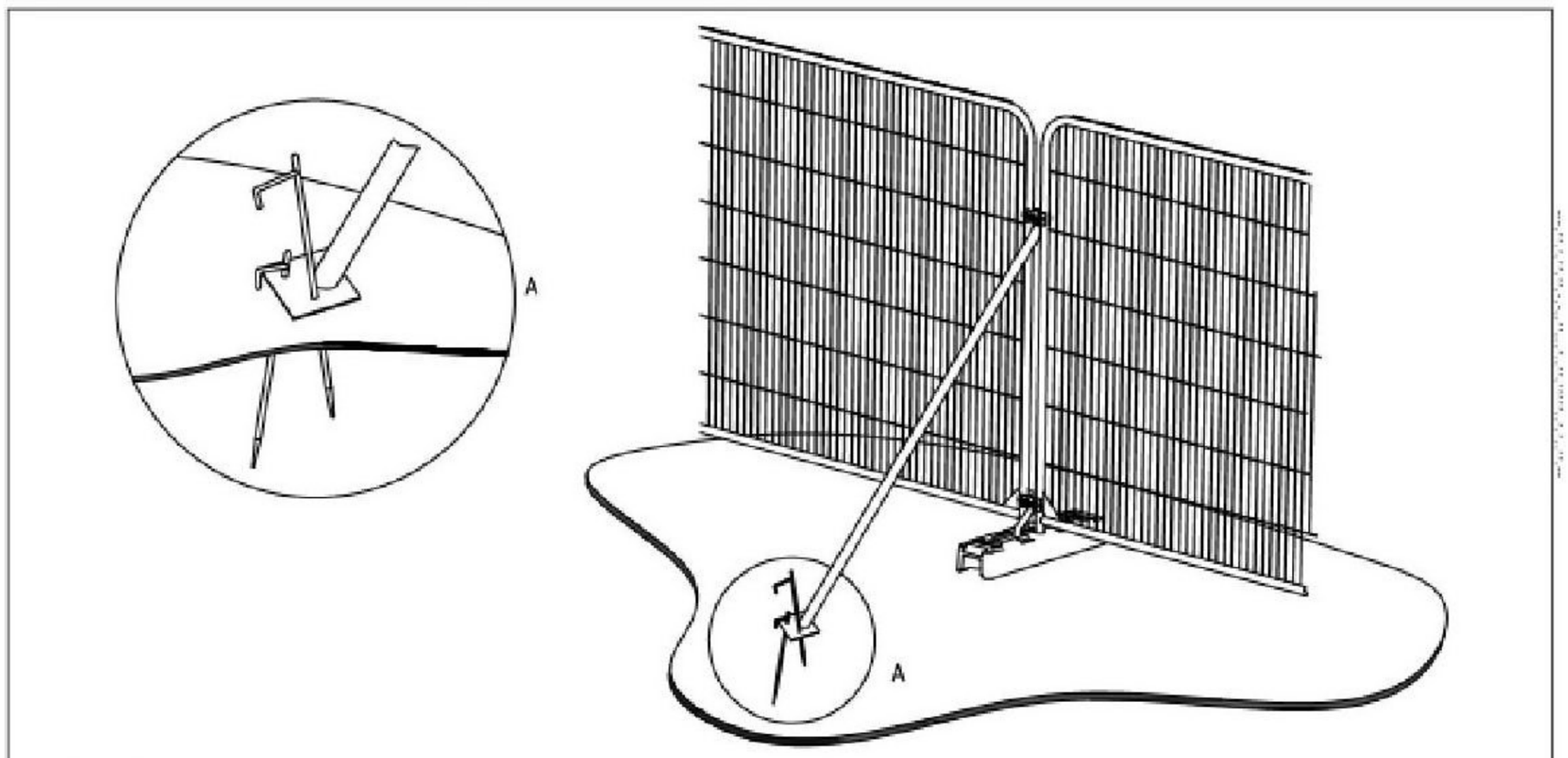
Figure 2 **Default specification for protective barrier**



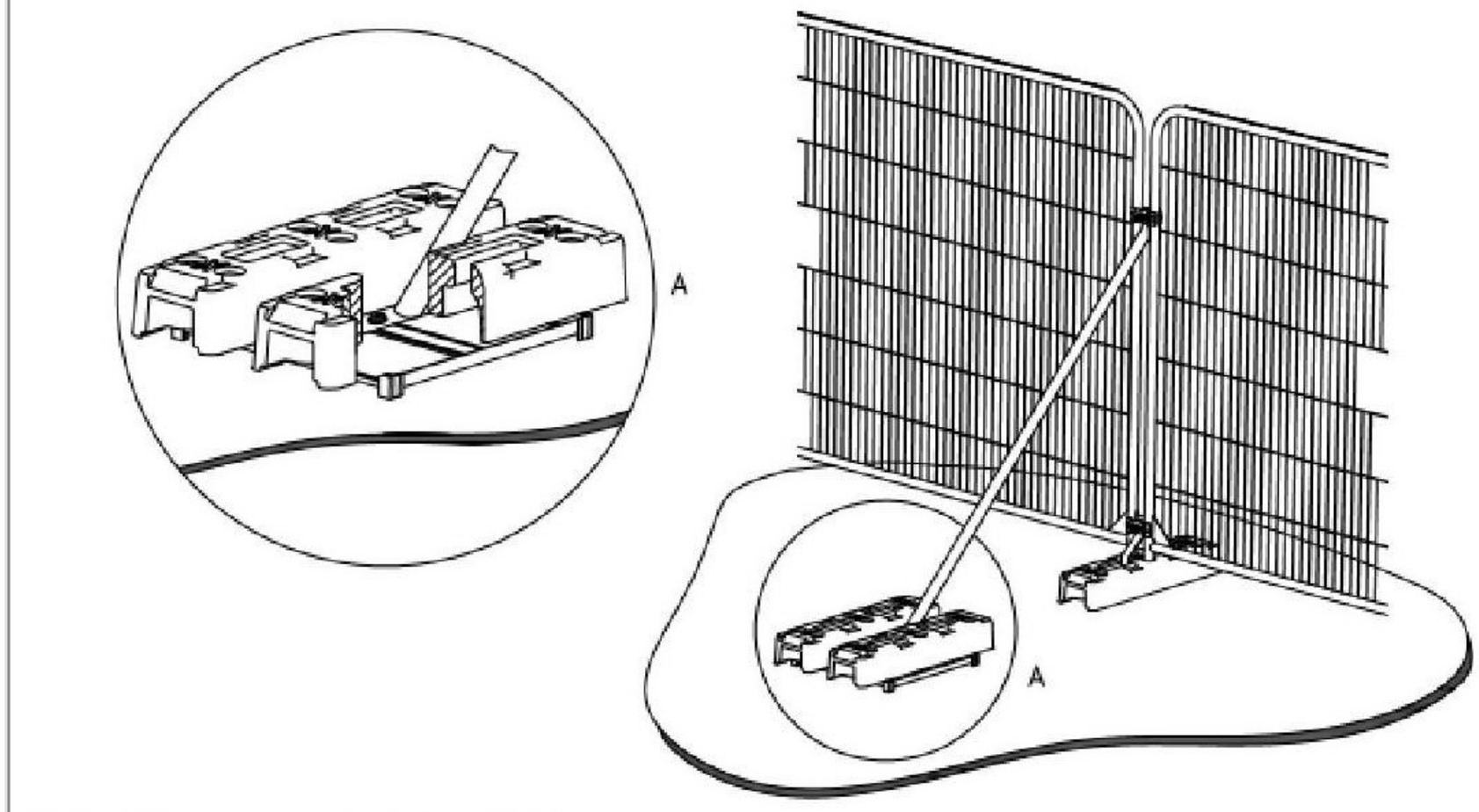
Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix E – Tree Works Schedule

Tree No	Species	Proposed Works	Reason
T26	Corsican pine	Crown raise to 5.0 metres over driveway.	To prevent damage to branches from vehicle movements.
G2	Corsican pine	Crown raise to 5.0 metres over driveway.	To prevent damage to branches from vehicle movements.