



Arboricultural Impact Assessment

Vine House

Paxhill

Lindfield

West Sussex

RH16 2QS

24th September 2018

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Notice to Interested Parties

To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

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CONTENTS

1	INTRODUCTION	4
2	METHODS.....	5
3	SURVEY RESULTS AND RECOMMENDATIONS	8
4	ARBORICULTURAL IMPACT ASSESSMENT.....	11
5	SCHEDULING OF WORK	13
6	SUMMARY AND CONCLUSIONS.....	14
	APPENDIX 1 – Cascade chart for tree quality assessment.....	15
	APPENDIX 2 – Temporary Tree Protection Barriers	16
	APPENDIX 3 – Glossary of terms.....	18
	APPENDIX 4 – Tree Survey Schedule.....	19
	APPENDIX 5 – Site photographs.....	25
	FIGURES.....	34

1 INTRODUCTION

- 1.1 Arbeco Ltd was instructed by Melissa Jorgensen and David Evans to identify and assess significant trees at Vine House, Paxhill Lane, Lindfield, West Sussex, RH16 2QS to help inform the proposed extension of the existing property to the north and south elevations, as well as converting the existing integral garage and stables into residential properties and developing a new pool house bordering a walled garden.
- 1.2 An Arboricultural Impact Assessment was undertaken by an Arbeco Ltd qualified arboriculturalist Naomi Charman BSc (Hons) MRes on the 7th September 2018.
- 1.3 This report provides a Tree Constraints Plan and a draft Tree Protection Plan which will be used to inform the design proposals to minimise potential damage to trees.
- 1.4 For the purpose of this report, the terms and definitions provided in Appendix 3 apply.

Site Description

- 1.5 The site is located on the outskirts of the village of Lindfield in the county of West Sussex (Ordnance Survey Grid Reference for the centre of the site: TQ 36208 26373). The site is approximately 0.6 ha in area and comprises buildings with hardstanding, woodland and hedgerows which provide wildlife corridors linking the site to Paxhill Park to the north east. The site is surrounded by arable fields and pasture. To the south lies a farm track which separates the site from Lindfield golf course.

Development Proposals

- 1.6 The development proposal will constitute extending the current property on the north and south elevations, while the integral garage will be converted into a gym/office, the stables at the east end will be converted into residential accommodation. A garage will be constructed to the north of the west end of the current dwelling and will be comprised of an open-sided oak timber frame. The stables to the east of the existing dwelling will be converted into guest rooms.

2 METHODS

Arboricultural Survey

- 2.1 All significant trees within the site boundary and adjacent to site, where access was permitted, were surveyed and individually assessed from ground level in accordance with the British Standard 5837: 2012 Trees in relation to design, demolition and construction. A significant tree is defined as any tree with a diameter at breast height of more than 75 mm or in the case of woodlands or substantial tree groups any tree with a diameter at breast height of more than 150 mm.
- 2.2 Where trees grow as groups with a relatively uniform age, species mix, structural and physiological condition, these were assessed as a group unless differentiation between the individuals was deemed necessary (e.g. to highlight significant variation in attributes).
- 2.3 Each tree and group of trees assessed was allocated to a category (A, B, C or U) based on the age class, condition and useful life expectancy of the tree. Categories A-C have three sub-categories to reflect the arboricultural (1), landscape (2) and cultural/conservation (3) qualities of each tree or group of trees. The table below provides a summary of the categories and of their implications for the development, full details of categorisation criteria are provided in Appendix 1.

Table 2.1 Summary of tree classification and implications for the development

Category	Definition	Implications for the development
A	Trees of high quality with an estimated remaining life expectancy of at least 40 years	These trees are a material consideration in the planning process. Every effort should be made to retain these trees.
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	These trees are a material consideration in the planning process. Every effort should be made to retain these trees.
C	Trees of low quality and value with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm	These trees are a material consideration in the planning process. Where possible amendments to a proposed design or mitigation measures should be considered in preference to tree removal.
U	Trees in poor conditions with an estimated remaining life expectancy of at less than 10 years	These trees are not a material consideration in the planning process and they may need to be removed for reasons of sound arboricultural management.

- 2.4 The Mid Sussex District Council website was consulted to obtain information about any significant trees protected by Tree Preservation Orders or located within Conservation Areas.
- 2.5 Each recorded tree and group was given a reference number which can be found within the Tree Survey Schedule in Appendix 4 and in Figures 3.1 and 3.2.
- 2.6 Branch spread was measured at the four cardinal points: north; east; south; west. Where possible, stem diameters were measured at 1.5m above ground using a measuring tape and current tree heights were measured using a Forestry Pro Laser Rangefinder.
- 2.7 The root protection area (RPA) of each single stem tree was defined as a circle with a radius 12 times the stem diameter.
- 2.8 For trees with two to five stems, the RPA was defined as a circle with a radius 12 times the sum of the stem diameters. The combined stem diameter was calculated as follows:
$$\sqrt{(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 + (\text{stem diameter } 3)^2 + (\text{stem diameter } 4)^2 + (\text{stem diameter } 5)^2}$$

For trees with more than five stems the combined stem diameter was calculated as follows:
$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$
- 2.9 The resulting calculated stem diameter was then multiplied by 12 to give the RPA.

Ash dieback disease

- 2.10 Following reports of ash dieback disease caused by the fungus *Hymenoscyphus fraxineus* in 2012 there is concern over the future health of ash trees in the UK. Any categorisation of ash trees within this survey is based around the condition at the time of surveying and life expectancy in a normal environment.
- 2.11 More information can be found on the Forestry Commission's web page: <http://www.forestry.gov.uk/chalara>.

Arboricultural Impact Assessment

- 2.12 The results of the Arboricultural Survey were used to evaluate the direct and indirect effects of the proposed design on the existing trees and identify appropriate mitigation measures.
- 2.13 The locations of the recorded trees and of their RPAs were digitised in the Tree Constraints Plan (Figure 3.1) to identify the constraints posed by the existing trees and inform the site layout design.
- 2.14 The final layout design and the locations and specifications of protective barriers, which create a Construction Exclusion Zone (CEZ) were digitised in the draft Tree Protection Plan (Figure 3.2).

Survey constraints and limitations

- 2.15 The arboricultural survey was undertaken from ground level and did not involve other specialist arboricultural inspections (e.g. root collar examination or sonic tomography). Where more detailed surveys/inspection of a tree were deemed necessary these have been recommended in the tree survey schedule.
- 2.16 Although obvious structural defects and the condition of trees were noted, this report does not constitute a full tree risk assessment or management plan.
- 2.17 Formal assessments of topography, drainage, service conduits and soil conditions including specific laboratory investigations of soil properties (i.e. plasticity index, moisture content, suction pressure) were not undertaken and are beyond the scope of this report.
- 2.18 Trees are living organisms and their health and condition change with time. Therefore, this assessment remains valid for 12 months from the date of inspection, or until a severe storm is experienced, after which time a new inspection is required. For the purpose of this report, a severe storm is defined as a period of violent weather, involving rain, hail, wind, snow, lightning or any combination of these, likely to cause damage to trees.

3 SURVEY RESULTS AND RECOMMENDATIONS

- 3.1 A total of 22 trees, five groups of trees and one woodland group were surveyed during the Arboricultural Impact Assessment at Vine House, Paxhill Lane, Lindfield, West, Sussex, RH16 2QS.
- 3.2 The Mid Sussex District Council website was consulted to determine whether any tree preservation orders (TPOs) were present within or adjacent to the site. There are no TPOs associated with the site and the site does not fall within a Conservation Area.
- 3.3 Two ash trees, T19 and T20, and one group of ash trees, G5 were surveyed. There was no evidence of ash dieback disease in any of the ash trees on site.

Category A trees

- 3.4 There were three category A1 trees subject to survey, T1, T5 and T18.
- 3.5 T1 was a mature sycamore *Acer psuedoplatanus*. T1 was in excellent health and condition and displaying good growth patterns.
- 3.6 T5 was a semi-mature dawn redwood *Metasequoia glyptostroboides*. T5 was an excellent example of the species. The tree's crown was slightly asymmetrical to the north but was in overall excellent health.
- 3.7 T18 was a mature silver maple *Acer saccharinum*. T18 had low sweeping branches typical of the species at maturity and was in excellent health and condition. T18 was rooted approximately 0.5 metres above the existing level of the driveway to Vine House. It is considered that a crown lift maybe necessary to accommodate site access and machinery during the development.

Category B trees

- 3.8 There were eight category B1 trees subject to survey, T2, T7, T8, T10, T12, T15, T19, T22. There were also four category B1 groups of trees subject to survey, G1, G3, G5 and G6. Additionally, there was one category B2 woodland group subject to survey, W1.
- 3.9 T2 was a semi-mature bird cherry *Prunus avium*, T2 was in good condition and displaying good form and growth habits.
- 3.10 T7 was a semi-mature pride of India *Koelreuteria paniculate*. T7 was a good example of the species, developing well with strong apical growth.
- 3.11 T8 was a mature walnut *Juglans regia*, there was some asymmetry in the crown, but the tree was in overall good health.
- 3.12 T10 was an early-mature wild service tree *Sorbus torminalis*. T10's crown was slightly unbalanced and there was a slightly lean in the stem, the tree was considered a good example of the species.
- 3.13 T12 was an early-mature oak *Quercus robur*, T12 was rooted on a sloping back but was growing well and not showing any signs of structural issues.

- 3.14 T15 was a maidenhair tree, *Ginkgo biloba*. T15 has ivy growing up its stem so a full inspection could not be undertaken. The tree had two co-dominant stems but was growing healthily.
- 3.15 T19 was a semi-mature ash *Fraxinus excelsior*. T19 had two co-dominant stems, the union was considered sound on inspection. T19 was holding very minor deadwood in its crown.
- 3.16 T22 was a mature oak. The tree was in overall excellent health and condition. There was a very small fungal bracket developing at the base of T22, a *Ganoderma sp.* Infection. Due to the very young age of the bracket it is considered that the tree still has a reasonable life expectancy. The *Ganoderma sp.* Should be monitored for progression.
- 3.17 G1 was a semi-mature mixed species group of apple trees *Malus spp.* The trees in the group were in good condition, at the time of the survey lots of fruit was present and the new growth was strong and healthy. There were some old wounds on the trees' stems and branches, but they were occluding well. G1 appeared to already be part of a pruning regime which should be continued.
- 3.18 G3 was an early-mature mixed coniferous group of pines *Pinus spp.* and Norway spruce *Picea abies*. The group was in overall good health and condition.
- 3.19 G5 was a small group of early-mature ash. There was some suppression and minor deadwood due to the trees growing in close proximity to each other, however, the trees were growing well and in reasonable health.
- 3.20 G6 was a semi-mature group of Limes *Tilia x europaea*, the group created an avenue leading up the main drive to Vine House. The trees were in good health and condition and had been pruned well in the past promoting good growth habits.
- 3.21 W1 was a semi-mature woodland, species included birch *Betula pendula*, elm *Ulmus minor* and oak. W1 was structured and healthy with minor deadwood in some of the older trees but no defects that are currently an issue.

Category C trees

- 3.22 There were nine individual category C1 trees subject to survey, T3, T4, T6, T9, T11, T14, T16, T17 and T20. There was also two category C1 groups of trees subject to survey, G2 and G4.
- 3.23 T3 was an early-mature mimosa *Acacia dealbata*. T3 was being suppressed slightly by surrounding shrubs but was in overall fair health.
- 3.24 T4 was an early-mature apple, *Malus sp.* T4 had long drawn up limbs but was in reasonable health. T4 appeared to already be part of a suitable pruning regime which should be continued.
- 3.25 T6 was a *Eucalyptus sp.* T6 was originally a mature tree that had been cut to a stump. The stump was still present with eight semi-mature stems growing out of the old stump. The remaining tree was in overall fair health, but some weak unions were present where the new stems have grown up.

- 3.26 T9 was a juvenile dragons claw willow *Salix babylonica* 'Tortuosa', T9 was a young tree that could develop into a category B1. There were some minor pruning wounds from nursery/formative pruning on the stem, the would were occluding well.
- 3.27 T11 was a juvenile oak, the tree was rooted on a slope and had two co-dominant leaders and some weak unions were present.
- 3.28 T14 was an early-mature holly *Ilex aquifolium*, the tree was in good health and showing reasonable developmental form.
- 3.29 T16 was an early-mature copper beech *Fagus sylvatica f. purpurea*. The tree's structural and physiological condition were fair, there was minor dieback present in the crown and areas of poor apical development.
- 3.30 T17 was an early-mature cherry *Prunus sp.* There were some decay pockets on the trees stem and pruning wounds that were occluding well. The tree was in overall fair condition and the growth patterns were reasonable for the genus.
- 3.31 T20 was a semi-mature Raywood ash, *Fraxinus angustifolia* 'Raywood'. T20 had co-dominant leaders, the union was weak but wasn't showing signs of being a current risk. The union should be monitored as the tree develops. There was a large pruning wound on the stem which was partially occluding and partially scarred.
- 3.32 G2 was an early-mature mixed species group of ornamental *Prunus spp.* There was some minor decay present and minor apical dieback. G2 was in overall fair condition.
- 3.33 G4 was a juvenile mixed deciduous species group of horse chestnut *Aesculus hippocastanum* and holly *Ilex aquifolium*. The horse chestnut in the group has established leaf miner infections. The larvae of the moth *Cameraria ohridella* hatch and eat the leaves. It has been considered that horse chestnuts can 'grow through' leaf miner infections, having completed their main phases of photosynthesis before the pathogen destroys too much of the leaf. In recent years research has suggested that this may not be the case and leaf miner can lead to tree decline. As a result, the horse chestnuts should be monitored for any negative changes in their growth patterns. <https://www.forestry.gov.uk/horsechestnutleafminer>.

Category U trees

- 3.34 There were two category U trees subject to survey, T13 and T21.
- 3.35 T13 was an early-mature Norway spruce. T13 was a dead defoliated tree and is recommended for removal.
- 3.36 T21 was a self-set early-mature sycamore T21 was growing very close to the oil tank supplying the house and was growing around and through the boundary fence line. T21 was considered to have very limited longevity in its position and is recommended for removal.

4 ARBORICULTURAL IMPACT ASSESSMENT

- 4.1 The development proposal comprises extending the current property on the north and south elevations, while the integral garage will be converted into a gym/office, the stables at the east end will be converted into residential accommodation. A garage will be constructed to the north of the west end of the current dwelling and will be comprised of an open-sided oak timber frame. The stables to the east of the existing dwelling will be converted into guest rooms.
- 4.2 The health of trees to be retained in this development could be impacted as a result of the following activities:
- Construction of the new buildings and areas of hard standing;
 - Level changes and other earthworks;
 - Movement of plant machinery impacting low canopies and RPAs;
 - The installation and routing of underground services.
- 4.3 It is recommended that preventative measures are implemented to reduce or mitigate damage to trees that are to be retained.
- 4.4 The RPA of T1 has been moved by 20% to the north, this is because T1 is rooted slightly higher than ground level of a bank, moving the RPA allows for the bank. The proposed pool house will encroach into the RPA of T1. Special methods will need to be designed for construction in this area. Special methods will need to include hand digging of foundations and special foundation design such as pile and beam or similar. Details of the depth of excavation required to build the pool will need to be confirmed.
- 4.5 The RPA of T22 has been moved by 20% to the north, this is because T22 is rooted slightly higher than ground level of a bank, moving the RPA allows for the bank. T22's RPA has also been moved to clear the area of hard standing to the south where root growth is likely to be limited. The proposed car port will encroach into the RPA of T22. Special methods will need to be designed for construction in this area. Special methods will need to include hand digging of foundations and special foundation design such as pile and beam or similar.
- 4.6 The RPA of T7 has been moved by 20% to the south to accommodate its position so close to the house. Root development is likely to be minimal in this area.
- 4.7 Temporary protective fencing will be required to protect the RPAs of T1-T12, T14-T20, T22 and G1 – G5.
- 4.8 No tree protection fencing is considered necessary to the south of the garden, east of the driveway. This area of the garden is only accessible by foot from the drive and is cut off from the north by a large dry pond.
- 4.9 The driveway leading to the house is considered wide enough to safely accommodate vehicular access to the site without endangering G6 or W1. No protective measures are considered necessary in these areas.
- 4.10 The RPA of T18 is considered sufficiently protected by the existing hard standing and the implementation of protective fencing shown in the draft tree protection plan.

Tree Surgery Work

- 4.11 A schedule for tree surgery works can be found in Appendix 4. The schedule details the works required for each tree in accordance to the recommendations in this report including any tree removal, remedial tree works and access facilitation pruning. An assessment of such works should be made by the project arboriculturalist.
- 4.12 All works will be carried out by a competent tree surgery firm, to standards recommended in the BS 3998: 2010 "Tree works – recommendations" document.

Tree Protection Barriers

- 4.13 Tree protection barriers should be erected around any trees that are to be retained prior to any materials or machinery being brought onto the site and before any demolition or soil stripping occurs. The location of the barriers is shown on the Draft Tree Protection Plan. Specifications of recommended barriers can be found in Appendix 2.
- 4.14 Any barriers once installed should not be removed or altered without consultation and approval from the project arboriculturalist. Where barriers are removed or altered, an AMS may be required to detail additional mitigation measures and the TPP will need to be updated to show any alternative routes and locations of protective barriers.
- 4.15 All barriers should remain *in situ* and intact for the duration of the works. If breaches occur during this period, work will stop and the breach must be repaired. Once the construction work is complete the barriers may be removed to facilitate soft landscaping. However, it is important that no heavy machinery is used at this stage within the RPAs unless suitable ground protection is employed, following further consultation with the project arboriculturalist.

Summary of constraints to be addressed in the AMS

- 4.16 The constraints below will need to be addressed by a detailed AMS and final TPP following planning approval:
- Special constructions methods for building in the RPAs of T1 and T22.
 - Positioning of tree protection barriers throughout the site.

5 SCHEDULING OF WORK

- 5.1 Consultation with the contractor, architects and planners will be carried out during the development of the AMS. The tree protection measures detailed in this report will be discussed so that details and timings of their implementation are understood by all relevant parties.
- 5.2 Consultation may include an on-site pre-commencement meeting attended by the site manager/agent, the project arboriculturalist and the Council's tree officer before any of the construction, excavation or demolition work begins. If the tree officer is not present, details of discussions and agreements made in the meeting can be presented in writing to the Local Planning Authority by the project arboriculturalist. Clarifications or modifications resulting from the meeting will be circulated to all in writing.
- 5.3 It will be necessary to monitor and assess progress throughout the development. If guidelines are followed the trees which are to be retained and are of value will be retained successfully and with minimal impact or damage

6 SUMMARY AND CONCLUSIONS

- 6.1 The development proposal will constitute extending the current property on the north and south elevations, while the integral garage will be converted into a gym/office, the stables at the east end will be converted into residential accommodation. A garage will be constructed to the north of the west end of the current dwelling and will be comprised of an open-sided oak timber frame. The stables to the east of the existing dwelling will be converted into guest rooms.
- 6.2 A total of 22 trees, five groups of trees and one woodland group were surveyed during the Arboricultural Impact Assessment at Vine House, Paxhill Lane, Lindfield, West, Sussex, RH16 2QS. Species included oak, dawn redwood, ash, Norway spruce, pride of India, Mimosa, sycamore, wild service tree, maidenhair tree, lime and silver maple.
- 6.3 There were three category A1 trees subject to survey, T1, T5 and T18.
- 6.4 There were eight category B1 trees subject to survey, T2, T7, T8, T10, T12, T15, T19, T22.
- 6.5 There were also four category B1 groups of trees subject to survey, G1, G3, G5 and G6.
- 6.6 There was one category B2 woodland group subject to survey, W1.
- 6.7 There were nine individual category C1 trees subject to survey, T3, T4, T6, T9, T11, T14, T16, T17 and T20. There was also two category C1 groups of trees subject to survey, G2 and G4.
- 6.8 There were two category U trees subject to survey, T13 and T21.
- 6.9 T13 was standing deadwood, it is recommended that this tree is removed.
- 6.10 It is recommended that T18 has a crown lift to accommodate vehicular traffic to the site during the development.
- 6.11 T21 was very close to the oil tank for Vine House, T21 was also in conflict with the boundary wire fencing. The tree was not considered to have a safe useful life expectancy and is recommended for removal.
- 6.12 Special construction methods will need to be considered for building in the RPAs of T1 and T22. Hand digging methods will need to be employed and special foundation design considered.
- 6.13 Temporary protective fencing will be required to protect the RPAs of T1-T12, T14-T20, T22 and G1 – G5.
- 6.14 It is considered that there is no arboricultural reason why the development cannot go ahead, by taking appropriate protective and mitigation measures so that all retained trees can be adequately protected, preventing any negative impacts to those trees.

APPENDIX 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
Category U 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.	- 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 U category 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 Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve.		
Category and definition	1 Mainly arboricultural qualities	2 Mainly Landscape qualities	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 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 woodpasture)
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of 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
Category C Those of low quality and value 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

APPENDIX 2 – Temporary Tree Protection Barriers

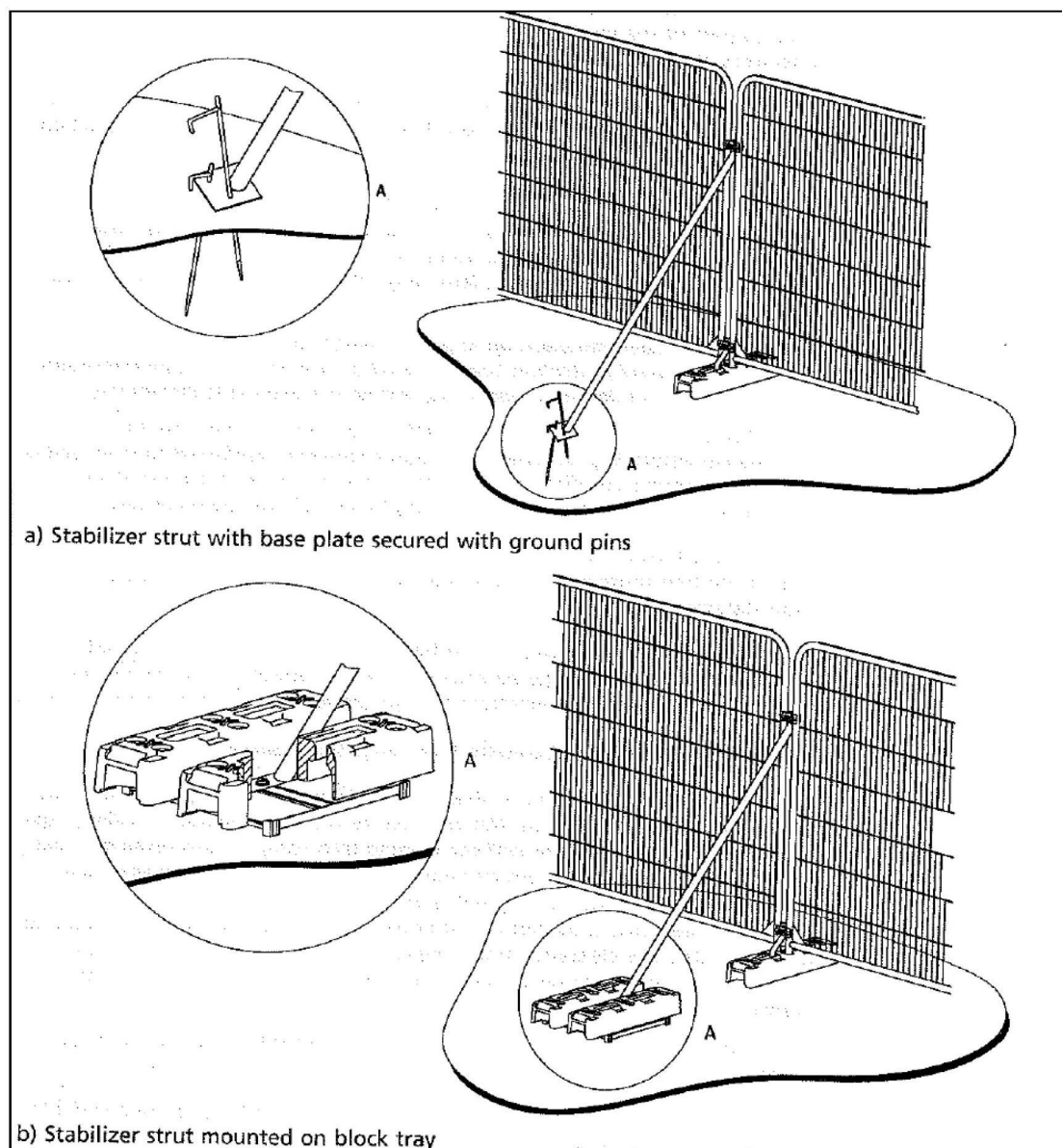


Figure 2.1 Recommended protective barrier for use on hardstanding (Fence A-Herras fence) from BS 5837:2012

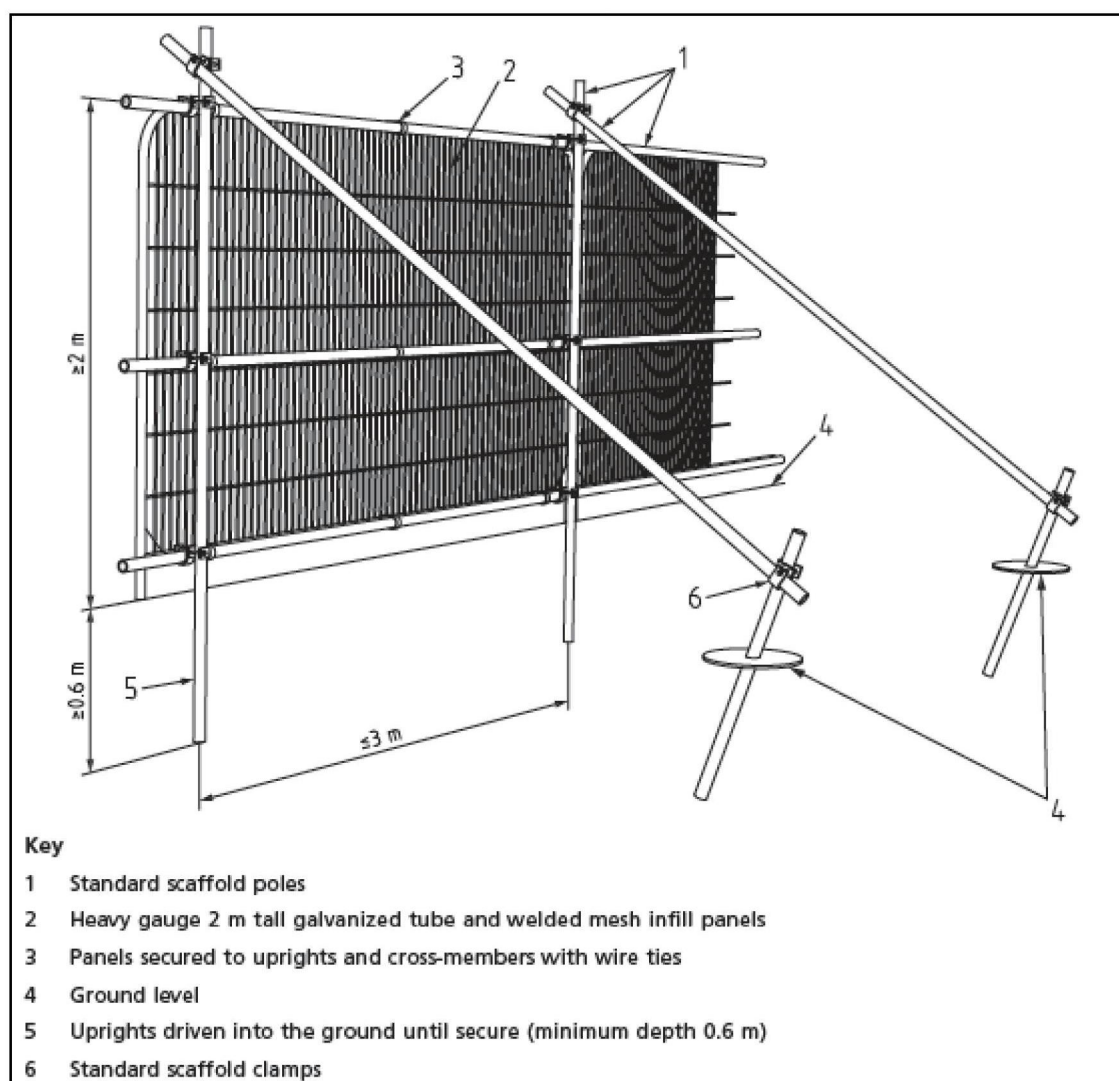


Figure 2.2 Recommended protective barrier for use on soft ground (Fence A-Herras fence) from BS 5837:2012

APPENDIX 3 – Glossary of terms

Arboricultural Impact Assessment (AIA) A study, undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Method Statement (AMS) The methodology for the implementation of any aspect of development that has potential to result in loss of or damage to a tree.

Construction Exclusion Zone Area based on the RPA (in square metres) identified by an arboriculturalist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the long-term retention of a tree.

Crown clearance The height or spread in metres of the lowest significant branches above ground level.

Diameter Trunk diameter measured at 1.5m above ground level or at the base of trees where they are twin or multi-stemmed.

DBH Diameter at breast height.

Height The height of a tree measured using a clinometer.

Management recommendations General comments on the condition of the tree, group or woodland and recommendations for future works.

Pruning The removal of living or dead parts of a tree. Such parts may be soft growth (leaves) branches limbs or sections of the trunk or stem.

Root Protection Area (RPA) Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form, in square metres.

Species The species is based on field observation and lists the common and botanical name of the specimen.

Spread Measurement of the largest extent of the trees branch growth.

Structural condition Description of any decayed or physical defects.

Tree Constraints Plan (TCP) Plan prepared by an arboriculturalist for the purpose of layout design showing the RPA and representing the effect that mature height and spread of retained trees will have on layouts through shade, dominance etc.

Tree Protection Plan (TPP) Scale drawing prepared by arboriculturalist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the AMS, which can be shown graphically.

Veteran tree Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristics of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned

APPENDIX 4 – Tree Survey Schedule

Tree number	Tree species	Age class	Estimated remaining contribution (years)	Tree Height (m)	Number of stems	Stem diameter (mm)	Crown spread (m)				Height to underside of canopy (m)	Physiological condition	Structural condition	Quality Assessment Category	Comments and observations	Recommended works	Root Protection Area Radius (m) for retained trees
							N	E	S	W							
T1	Sycamore <i>Acer pseudoplatanus</i>	M	40+	18	1	1000	6	4	4.5	5	4	Good	Good	A1	Excellent health and condition	N/a	12
T2	Bird cherry <i>Prunus avium</i>	Sm	40+	7	1	350	2	2	2.5	1.75	2.20	Good	Good	B1	Good health, condition and form	N/a	4.2
T3	Mimosa <i>Acacia dealbata</i>	Em	20+	6.5	1	275	2	1	1.5	2	2	Fair	Fair	C1	Deadwood present, suppression from surrounding shrubs, overall reasonable health.	N/a	3.3
T4	<i>Malus sp.</i>	Em	30+	4.5	1	150	1.5	1	1.25	1	1.75	Good	Fair	C1	Long, leggy crown, slight lean, reasonable health.	Cut back to previous pruning points.	1.8
T5	Dawn redwood <i>Metasequoia glyptostroboides</i>	Sm	40+	18	1	800	3	4	3.5	3.5	0.5	Good	Good	A1	Slightly asymmetrical to the north, excellent health and condition.	N/a	9.6

ARB1412: Arboricultural Impact Assessment

T6	<i>Eucalyptus sp.</i>	Sm/M	<20	9	8	Avg 175	2	2.5	1	2.75	0	Fair	Fair	C1	Originally large tree removed (stump remaining) re grown as several new stems.	N/a	2.1
T7	Pride of India <i>Koelreuteria paniculata</i>	Sm	30+	7	1	300	3	7.5	7.5	2	2.25	Good	Good	B1	Good example of species, growing well.	N/a	3.6
T8	Walnut <i>Juglans regia</i>	M	40+	7.5	1	350	3	3	3.5	2.25	1.25	Good	Good	B1	Good example of species, growing well.	N/a	4.2
T9	Dragons claw willow <i>Salix babylonica</i> 'Tortuosa'	Juv	40+	5.5	1	250	1	1.25	1.75	1.25	1.5	Good	Fair	C1	Young tree could develop into a cat. B, some pruning wounds on stem, occluding well, minor suppression from T8.	N/a	3.0
T10	Wild Service Tree <i>Sorbus torminalis</i>	Em	40+	6	1	300	2.5	3	3	3.5	2.25	Good	Good	B1	Excellent specimen, ecological importance, good health and condition.	N/a	3.6

ARB1412: Arboricultural Impact Assessment

T11	Oak <i>Quercus robur</i>	Juv	40+	5.5	2	90 100	1.5	1	1.75	2	0.5	Fair	Fair	C1	Young, co-dominant leaders, self sett, weak unions, rooted on slope.	N/a	2.3
T12	Oak <i>Quercus robur</i>	Em	40+	12	1	350	375	4	3	2.25	1.5	Good	Fair	B1	On slope, but in good health and condition, showing stability.	N/a	4.2
T13	Norway spruce <i>Picea abies</i>	Em	N/a	8.5	1	225	1	1.5	1.5	1	0	Dead	Dead	U	Dead defoliated tree	Remove	2.7
T14	Holly <i>Ilex aquifolium</i>	Em	30+	6.5	1	150	1	1.25	2	1	0	Fair	Fair	C1	Good health and reasonable form.	N/a	1.8
T15	Maidenhair tree <i>Ginkgo biloba</i>	Em	40+	9	1	225	2.5	1	2	1	0.5	Good	Fair	B1	Co-dominant, leaders, possible weak unions under Ivy.	N/a	2.7
T16	Copper beech <i>Fagus sylvatica f. purpurea</i>	Em	30+	7	1	200	3.5	2.5	3	7.5	0	Fair	Fair	C1	Dieback in crown, poor apical development.	N/a	2.4
T17	<i>Prunus sp.</i>	Em	40+	5	2	125 175	2	1.25	2	1.5	0.5	Fair	Fair	C1	Pruning wound occluding well. Some	N/a	2.2

ARB1412: Arboricultural Impact Assessment

																decay pockets, good growth patterns for species.		
T18	Silver maple <i>Acer saccharinum</i>	M	40+	15	1	950	8	7.5	9	6.5	0.75	Good	Good	A1	Excellent health and condition. Low crown and sweeping branches typical of species.	Crown lift to accommo date access.	11.4	
T19	Ash <i>Fraxinus excelsior</i>	Sm	40+	12	1	400	3.5	2.75	4	3	1.75	Good	Good	B1	Co-dominant leaders, but union sound. Very minor deadwood	N/a	4.8	
T20	Raywood Ash <i>Fraxinus angustifolia</i> 'Raywood'	Sm	40+	12	2	200 275	5.5	4	5	4.5	3	Good	Fair	C1	Tree has co-dominant leaders, weak union should be monitored. Large pruning wound partially scarred, partial occlusion.	N/a	3.4	
T21	Sycamore <i>Acer pseudoplatanus</i>	Em	<20	9	3	200 175 150	3	3.5	1	3	0.75	Fair	Poor	U	Self- sett, very close to oil tank, growing around fence,	Remove.	2.7	

ARB1412: Arboricultural Impact Assessment

																limited longevity.		
T22	Oak <i>Quercus robur</i>	M	40+	20	1	1200	8	7	7.5	6.5	4	Good	Good	B1	Ganoderma spp. at base-very small, no issue at this stage. Fungus at base (not honey fungus). Minor deadwood, tree in excellent form and health, very well managed.	N/a	14.4	
G1	<i>Malus spp.</i>	Sm	30+	Avg. 4.5	Group	Avg. 225	1.5	2	1	1.5	Avg. 1.5	Fair	Fair	B1	Some wounds in stems, occluding well. Lots of fruit. Good health and condition.	Cut back to previous pruning points.	2.7	
G2	<i>Prunus spp.</i>	Em	<30	Avg. 3.5		4	Avg. 175	2	1.5	1.5	1.75	Avg. 2	Fair	Fair	C1	Minor decay and some die back, overall fair condition.	N/a	2.1

ARB1412: Arboricultural Impact Assessment

G3	<i>Pinus spp.</i> , Norway Spruce <i>Picea abies</i>	Em	40+	Avg. 11	Group	Avg. 275	2.5	3	2	2.25	Avg. 2	Good	Good	B1	Group of coniferous species, good health and condition.	N/a	3.3
G4	Horsechestnut <i>Aesculus hippocastanum</i> , Holly <i>Ilex aquifolium</i> .	Juv	40+	Avg. 5	Group	Avg. 125	1.5	1	1.75	1.5	Avg. 1.5	Fair	Fair	C1	Young trees could develop in higher category, established leaf minor on horsechestnut	N/a	1.5
G5	Ash <i>Fraxinus excelsior</i>	Em	40+	Avg 11	Group	Avg 300	1.5	4	2	3.5	Avg 2.5	Good	Fair	B1	Some suppression and deadwood, Ivy on stem, couldn't fully inspect.	N/a	3.6
G6	Lime <i>Tilia × europaea</i>	Sm	40+	Avg. 12.5	Group	Avg. 275	2	1.5	1.5	2	Avg. 3.5	Good	Fair	B1	Avenue of trees leading up main drive to dwelling. Good health and reasonable form.	N/a	3.3

Table key: Juv = Juvenile; Em = early-mature; Sm = semi-mature; M = Mature; Om = over-mature; V = veteran; # = estimated parameter

APPENDIX 5 – Site photographs



Photograph 1: T1



Photograph 2: T2



Photograph 3: T3



Photograph 4: T4



Photograph 5: T5



Photograph 6: T6



Photograph 7: T7



Photograph 8: T8



Photograph 9: T9



Photograph 10: T10



Photograph 11: T11



Photograph 12: T12



Photograph 13: T13



Photograph 14: T14



Photograph 15: T15



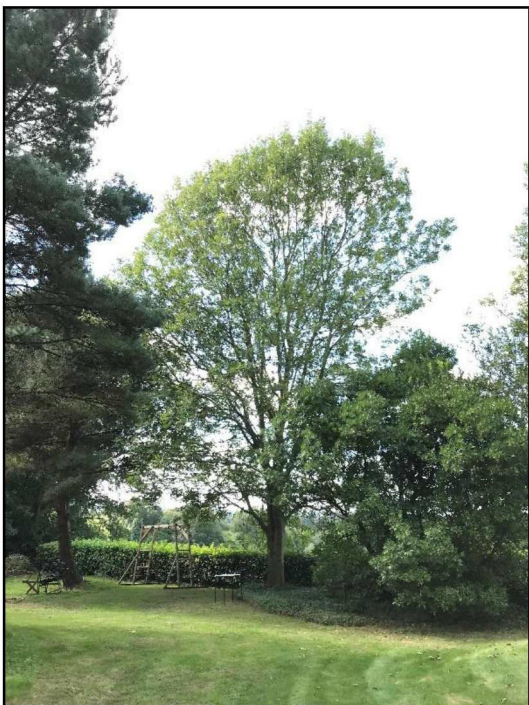
Photograph 16: T16



Photograph 17: T17



Photograph 18: T18



Photograph 19: T19



Photograph 20: T20



Photograph 21: T21



Photograph 22: T22



Photograph 23: G1



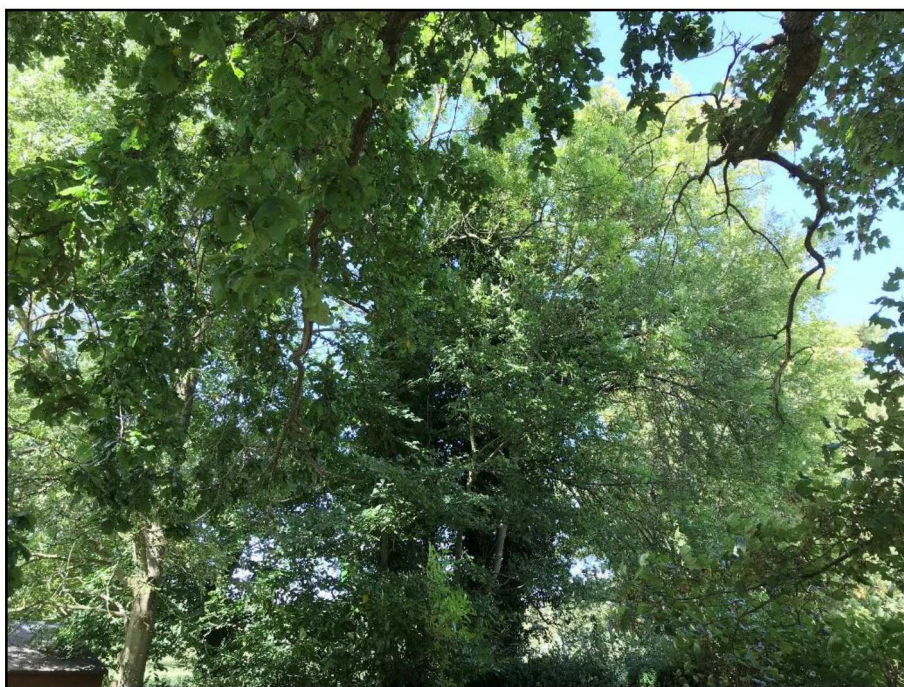
Photograph 24: G2



Photograph 25: G3



Photograph 26: G4



Photograph 27: G5



Photograph 28: G6

FIGURES

Figure 3.1: Tree Constraints Plan

Figure 3.2: Tree Protection Plan

Figure 3.1: Tree Constraints Plan

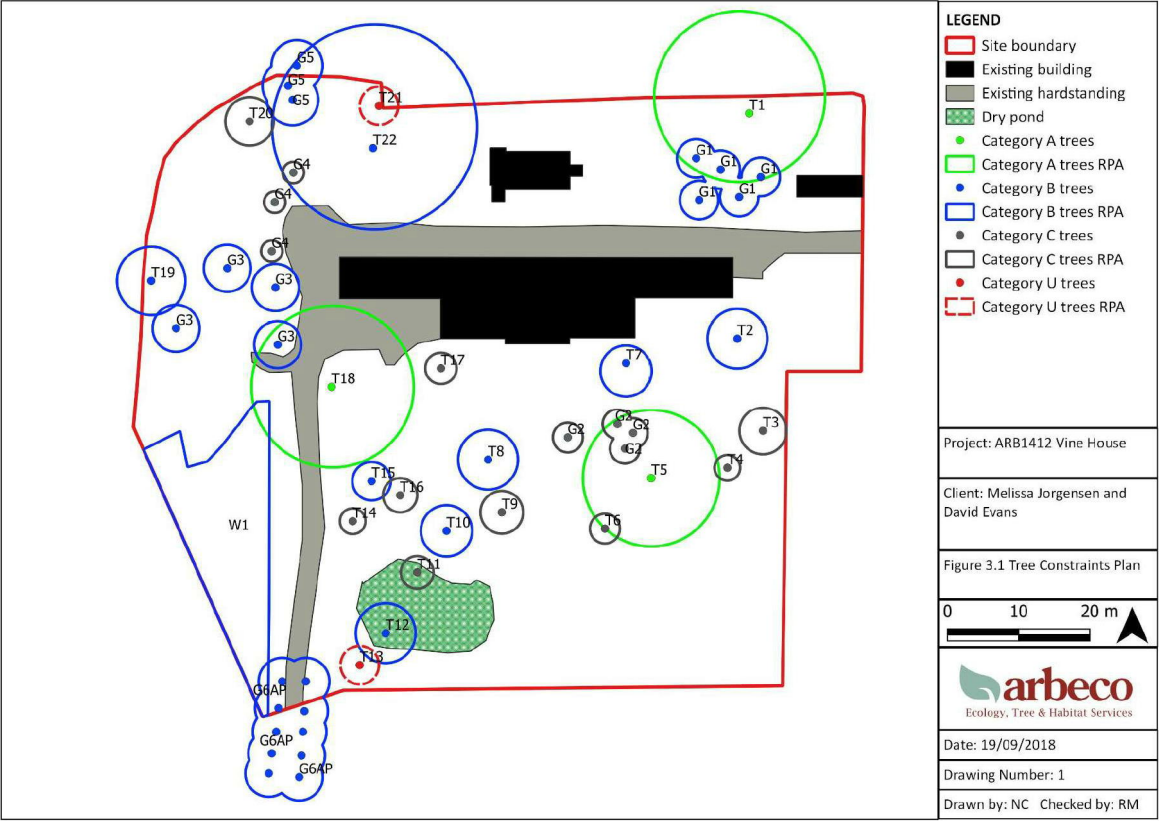


Figure 3.2: Tree Protection Plan

