



Christopher Hoare Tree Services Ltd

Arboricultural Contracting & Consultancy

Limited Company No: 04766544

VAT Registration: 750117661

Arboricultural Report

- Pre-development Arboricultural Tree Survey
- Arboricultural Impact Assessment
- Arboricultural Method Statement

39

Havant Road
Emsworth
Hampshire
PO10 7JD

Prepared for:
Mr Simon O'Hea



Proud members of



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The statements made in this report do not take account of extreme weather events, rooting environment alterations, accidental damage, vandalism or works not carried out to industry recognised standards or best practice. Christopher Hoare Tree Services Ltd does not accept any liability associated with these instances. The validity of this report ceases after two years from the instance of the initial site inspection, or if the site conditions change as a result of unspecified works affecting the subject tree/s.



1. Details

1.1. Client

Mr Simon O’Hea

1.2. Site address

39

Havant Road

Emsworth

Hampshire

PO10 7JD

1.3. Instruction

- 1.3.1. I have been instructed by you to conduct the following works
- 1.3.2. Conduct a pre-development arboricultural survey at the site address above. The tree survey will be conducted in accordance with **BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations**. The survey will record the condition and dimensions of all trees, groups of trees, woodlands and significant vegetation contained on, and within an influencing distance of the proposal. Trees will be categorised using the criterion described in **Table 2** of **BS 5837:2012**. The data gathered will be compiled into a survey schedule, tree positions and dimensions will be represented on an appropriate plan provided with this report¹.
- 1.3.3. Create an Arboricultural Assessment of the proposed development at the site address provided above. This report will examine the likely arboricultural impact and future relationship of the proposed development on the retained tree population contained at and within an influencing distance of the site. This assessment is to include a **Tree Constraints Plan, Tree Retention/Removal Plan** and **Tree Protection Plan**.
- 1.3.4. I have also been instructed by you to create an **Arboricultural Method Statement** for the proposed development. The purpose of this document is to detail the methods required to guide the proposal through development in a sensitive, conscientious and arboriculturally acceptable manner.

1.4. Scope

- 1.4.1. This report is only associated with the arboricultural aspects of the site and does not relate to ecological or archaeological matters which may be present. This report and the assessments and methods prescribed or discussed within it have been constructed in accordance with British Standards **BS 5837:2012 “Trees in relation to design, demolition, and construction – Recommendations.”**

¹ Appendix B



- 1.4.2. A full hazard assessment of the trees² has not been undertaken during this survey and it is considered to be beyond the scope of this report. Any obvious defects have been identified and included along with any pertinent recommendations relating to the remediation of risks is included in the **Tree Survey Schedule** of this report.

1.5. Limitations

- 1.5.1. The assessments made within this document are based upon the information and plans provided by you. The conclusions, recommendations, and discussions presented in this report have been made using the BS 5837; compliant tree survey conducted by myself on the **26th of June 2017**.
- 1.5.2. **The plans I have prepared are constructed in a preliminary format which may be amended where appropriate during the design process.**
- 1.5.3. **The plans are not to be used for the scaling of construction. This survey is not a safety or hazard assessment for insurance purposes and should not be used as such.**
- 1.5.4. **Tree positions have been plotted using the provided land survey/site layout drawing. Consequently, I am not responsible for any disparity in tree locations.**

1.6. Document disclosure

- 1.6.1. I have been supplied with the following documents:

- **39 Havant Road Emsworth – trees.dxf**
- **A.02.7 Landscape – Trees A3.pdf**
- **Statement Hearnbrook.pdf**

1.7. Additional background information

- 1.7.1. Please note that this is an updated report (**V2**) which supersedes any previous versions. This report has been updated to include a **Tree Protection Plan³** as requested by **Havant Borough Council**.
- 1.7.2. I personally visited the site for the purpose of conducting a tree survey and gathering appropriate data. This report and its contents were constructed by myself in accordance with **BS 5837:2012 “Trees in relation to design, demolition and construction – Recommendations.”** The construction of this report has also made reference to the following sources:
- **BS 3998:2010 “Tree Work – Recommendations.”**
 - **NJUG Volume 4 “Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.”**
 - **APN12 “Through the trees to development.”**
 - **Trees in Hard Landscapes: A Guide for Delivery.**
- 1.7.2. A number of trees growing within an influencing distance of the site were not identified on the site layout plan which I was provided with. I have plotted any additional trees using a handheld GPS device which has a nominal accuracy of 0.5-1m. Subsequently, their positions should be treated as approximate. The majority of these trees are located away from any proposed works.

² Including an assessment of internal decay or its significance.

³ **Q12978/TPP/15-9-17_V1**



2. Site visit and background

2.1. Site visit

- 2.1.1. I undertook a site visit on the morning of the **26th of June 2017**. The purpose of this visit was to conduct a ground level visual tree assessment survey, recording data, assessing the condition of the tree population and categorising the trees in accordance with **BS 5837:2012 Trees in Relation to Design, Demolition, and Construction – Recommendations**. The tree identification numbers used within this report correspond with the tree survey schedule contained within the appendices of this document⁴. Appropriate tree categorisations were applied to each tree and suitable vegetation during this visit. The day was warm, sunny and bright with a light wind which provided good surveying conditions. The weather did not pose a significant constraint on the surveying process, and most parts of the trees above ground structure were visible.

Conditions	Result
Temperature	19°C
Cloud Cover	20%
Precipitation	0%
Humidity	60%
Wind Speed (Beaufort)	F2



Red line is indicative of survey location

2.2. Site description

- 2.2.1. The survey site comprises of a large brick built two-storey house, detached garage and outbuildings set in a large informal garden located on the northern side of Havant Road in the town of Emsworth. Access to the property is via a gravel driveway which leads from Havant Road in a northerly direction along the eastern boundary of the property. The Coach House which was once used as a stable is located close to the northern boundary of the property. The Coach House has two storeys and a large sliding front door. Numerous outbuildings are attached to the eastern end of the Coach House and extend southward along the eastern boundary of the property. The overall topography of the site is level and ground conditions remained firm across the site.

2.3. Soil assessment

- 2.3.1. I have not conducted a detailed soil assessment for the site. However, the British Geological Survey online geology map indicates that the site resides on top of London Clay Formation consisting of Clay, Silt and Sand. The property is also indicated as having a high water table. Details regarding the soils present at the site, if appropriate, should be sought from an industry expert prior to the commencement of development.

⁴ Tree Survey Schedule, Appendix A



2.4. Tree observations

- 2.4.1. The tree population which inhabits the site comprises of numerous mature and over-mature native and non-native trees. A number of over-mature ornamental trees and shrubs are growing on the site. The most notable of which is a large Cornelian Cherry⁵ (*Cornus mas*). This tree is very large and has attained a significant size. The tree is located close to the garage, driveway and location of the proposed development. The eastern canopy of the tree overhangs the driveway and location of proposed development. During my site visit, I also noted an over-mature Silver Birch⁶ (*Betula pendula*) which is growing close to the north-western corner of the garage. This Birch tree has low vitality and poor form. I observed numerous decay cavities in its main limbs the most notable of which extends above the roof of the garage. The tree has shed a number of limbs historically resulting in torn wounds on the stem of the tree which is characterised by exposed heartwood.
- 2.4.2. During my assessment of the tree population growing at the site, I identified a tree which causes me concern regarding its structural condition. A large Austrian Pine⁷ (*Pinus nigra*) is located close to the north-eastern corner of the main house. The tree has a one-sided canopy and leans over the neighbouring property to the east. The tree has a distinct swelling of its lower stem which is abnormal to its normal stem taper. During my assessment of this tree, I observed a profusion of resin bleeding emanating from its stem to a height of approximately 2.5m above ground level. I also noted bark lifting above pronounced swellings in the stem of the tree. The swellings are biomechanical features characteristic of wood fibre buckling and are caused by the rapid production of reaction wood around failed wood fibres. Fibre buckling and reaction wood formation in Pine trees is a good indicator of internal decay and a thinning of its residual stem wood. This assumption is further corroborated by the profuse resin bleeding which is emanating from the stem of the tree⁸. In my professional opinion, I believe the tree to be undergoing significant internal heartwood decay of its lower stem.

2.5. Legal protection of trees

- 2.5.1. This report is not associated with the legal protection of the trees included in this survey. The presence of any statutory protection including conservation areas should be ascertained by the owner/contractor prior to the commencement of any potential tree works at the site. This report is not associated with archaeological issues or any other matter beyond the assessment of the trees.

2.6. Description of proposed development

- 2.6.1. The proposed development involves the refurbishment and repair of the Coach House and outbuildings. The proposal also includes the erection of a modern glazed Oak entrance structure/porch at the front of the Coach House. A new arched window is proposed to be installed in the western gable wall of the Coach House. A new floor is proposed to be installed in the Coach House which will help address the structural issues associated with the building. A new entrance and patio are proposed to be constructed in and adjacent to the north elevation of the Coach House. The concrete driveway surface which leads from the gravel driveway is to be removed and replaced with a gravel wearing course. Further renovations are planned for the adjoining outbuildings. The final conversion will result in the Coach House being converted into a two-bedroom dwelling.

⁵ T15

⁶ T16

⁷ T8

⁸ See Figure 1, Appendix D



- 2.6.2. The existing drainage run leading from the Coach House to a manhole cover located close to the north-eastern corner of the main house will be re-excavated and upgraded to carry new services for the renovated Coach House.

2.7. Tree survey methodology and interpretation of data

- 2.7.1. The arboricultural survey has been undertaken with the aim of determining the status of the tree population inhabiting the site. The survey has been conducted to **British Standards 5837:2012 "Trees in relation to design, demolition and construction – Recommendations"**.
- 2.7.2. Trees, woodlands, hedges and significant shrub masses with a stem diameter greater than 75mm, when measured at 1.5m above ground level, will be recorded and categorised using the cascade chart for tree quality assessment⁹ prescribed in BS 5837:2012 "Trees in relation to design, demolition, and construction – Recommendations." Tree dimensions will be recorded using a range of equipment. A clinometer will be used to record height, Tree canopy spread and height above ground will be measured using a laser measurement tool, stem diameter¹⁰ will be measured using a handheld tape and tree position and data collection will be recorded using a handheld GPS device. Measurements will be recorded as accurately as possible, although where access is restricted measurements will be approximate. Approximate measurements will be clearly indicated as such.

Instruments used			
Height	Haglöf EC II electronic clinometer	GPS and survey data	Trimble Juno T41/5
Stem diameter	DBH tape measure		
Distance	Laser measure		

- 2.7.3. No individual identification numbers have been allocated to the trees included in the survey as they are clearly identifiable within the landscape. All trees and significant vegetation masses above 75mm diameter have been recorded using a GPS device. These positions have then been plotted on the Tree Constraints Plan using the provided topographical survey as a base layer. Tree data is recorded in the form of a schedule detailing: tree number, species, and stem diameter at 1.5m above ground level, tree height, crown spread, and height of the first branch as well as the direction of growth. Where it has not been possible to measure the diameter at 1.5m due to tree physiology it has been conducted according to BS 5837:2012 guidelines. Diameter measurements have been recorded to the nearest 10mm, height to the nearest 0.5m and crown spread and other distance measurements to the nearest 0.3m. Details of the survey data are provided in the Tree Survey Schedule section of this document.
- 2.7.4. Trees located outside of the development but within 15m of the boundary have been included in the survey. These trees may potentially be influenced by the development. As a result, they require appropriate surveying and their locations plotting. Further protection may also be required for off-site trees, details of which will be included within the method statement and indicated on the appropriate plans.

⁹ BS 5837:2012 Section 4.5, Table 1

¹⁰ Measured in accordance with BS 5837:2012



2.8. Categorisation

2.8.1. Trees are categorised according to BS5837:2012.

- **Category A: Trees of high quality** with an estimated remaining life expectancy of at least 40 years.
- **Category B: Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years.
- **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.
- **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.

2.9. Sub-categories

2.9.1. **A, B** and **C** may qualify for retention through further sub-categories.

1. Mainly arboricultural qualities.
2. Mainly landscape qualities.
3. Mainly cultural values including conservation.

2.10. Root protection area (RPA)

2.10.1. The root protection area for each tree has been calculated for each of the Category **A, B, C** and **U** trees. This calculation has been made according to Section 4.6 and Annex D of BS5837:2012.

Number of stems	Calculation
Single stem Tree	$\left[\frac{\text{RPA(m}^2\text{)} = \text{Stem diameter (mm)} @ 1.5\text{m} \times 12 \times 3.142}{1000} \right]$
Trees with 2 to 5 stems	$(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2$
Trees with more than 5 stems	$(\text{mean stem diameter})^2 \times \text{number of stems}$
<i>NOTE: The 12x multiplier is based on NJUG 10 (9) and published work by Matheny</i>	

Table 9.8.1: BS5837:2012 extract.

2.10.2. The root protection area is the perceived minimum rooting volume required for a tree to maintain good vitality. Vehicular and pedestrian access should be restricted from these areas by appropriate barriers according to BS5837:2012 Section 6 figures 2 & 3. The shape and position of the RPA may be modified by an Arboriculturalist to meet the constraints posed by individual sites.



2.11. Retention value

- 2.11.1. Category **A**-trees are trees which are particularly good examples which are essential components of the landscape. Trees, groups or woodlands of particular visual importance or significant conservation value are also considered as a categorisation A. Trees of this categorisation should be afforded the highest level of protection and warrant significant amendments to the proposed scheme in the instance of potential conflict.
- 2.11.2. Category **B**-trees are those which qualify as moderate quality. These trees may have been downgraded as a result of impaired condition due to a number of potential factors such as defects due to unsympathetic past management. Category B-trees should still be afforded a high level of protection with alterations to the proposed scheme being favourable rather than their removal.
- 2.11.3. Category **C**-trees are assessed as having a low value and only a transient landscape contribution. This is due to their limited merit or impaired condition. Category C trees should not usually impose any constraints on the proposal, however, they should be retained where possible.
- 2.11.4. Category **U**-trees are those which are in such poor condition that they cannot be reasonably retained as viable living structures.
- 2.11.5. All tree categories and their locations will be marked and clearly identified on the accompanying **Tree Constraints Plan**¹¹. Any further recommendations and observations are included in the **Tree Survey Schedule**.

¹¹ Appendix B



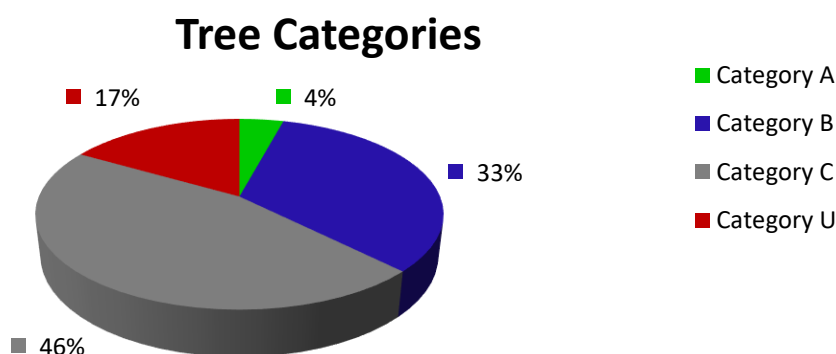
3. Results, conclusion & recommendations

3.1. Results

- 3.1.1. The results of the survey¹² indicate the presence of eleven low-quality trees, hedges and groups which are located within the survey site or within an influencing distance of the proposal. Eight moderate quality and a single high-quality tree have been identified as being present at the site by the survey.

Tree Quality Category	A	B	C	U
Tree No's	1	8	11	4

- 3.1.2. The graph below provides a visual representation of the value of the tree population at the site. A detailed list including tree dimensions and a calculated root protection area is included within the tree survey schedule section of this report. The locations and tree dimensions of each tree have also been overlaid onto the existing topographical survey, this can be found in Appendix B¹³.



- 3.1.2. A number of unretainable trees have been identified by the survey. These trees have serious irremediable defects which render them unretainable in the site landscape. The graph below provides a visual representation of the value of the tree population at the site. A detailed list including tree dimensions and calculated root protection areas are included within the **Tree Survey Schedule** section of this report. The locations and tree dimensions of each tree have also been overlaid onto a positionally accurate plan, this can be found in **Appendix B**¹⁴.

¹² Appendix A, Tree Survey Schedule

¹³ Tree Constraints Plan

¹⁴ Tree Constraints Plan



3.2. Conclusion

- 3.2.1. The results of the survey indicate the tree population as consisting of predominantly low-quality trees. These should be retained only where they do not pose a significant constraint on the development process. The category **U** trees which have been identified by the survey should only be retained where they do not pose a significant risk to persons or built structures located at the site. These trees have impaired structural and biological conditions which warrant their removal. However, they may in some instances hold cultural or personal merits. All category **A** and **B** trees should be retained and afforded the highest level of protection during the development process unless their removal is warranted in mitigating circumstances.

3.3. Recommendations

- 3.3.1. Retain and protect all quality **A** and **B** trees as a priority, these trees have the highest value and contribution to the site landscape and surrounding area.
- 3.3.2. Retain category **C** trees only where appropriate. These trees are of low quality and offer only a transient landscape contribution. This is due to their limited merit or impaired condition. Where category **C**-trees are to be retained they should be afforded appropriate protection which conforms to the specification as prescribed within BS 5837:2012.
- 3.3.3. Remove all category **U** trees. These trees have a low material value and are of such an impaired condition that their retention is not warranted. The loss of these trees can be easily mitigated through supplementary planting elsewhere at the site, if appropriate. Category **U** trees located away from the proposal and or not directly impacted may be retained where appropriate.



4. Arboricultural impact assessment

4.1. Introduction

The purpose of this assessment is to examine the relationship between the proposal and its likely impact on the retained tree population, both at and within an influencing distance of the site. This assessment will also determine whether the proposed works can be conducted without adversely affecting the retained trees in the short and long term. Recommendations and mitigation will be suggested in order to reduce or remove the potential impact on the retained tree population and assist in the implementation of the proposal in the most arboriculturally acceptable manner.

4.2. Considerations

- 4.2.1. Trees are complex living organisms which may be damaged by the activities involved in construction and demolition. This damage can be through direct damage (machinery striking a tree) or Indirect (contaminants entering the soil). Trees do not heal from inflicted injuries and will carry the scars for the remainder of their life. Wounds act as colonising areas for fungal spores and other pathogens to enter a tree. Once colonised the decay process can begin and the tree may begin to decline or die.
- 4.2.2. The majority of tree roots proliferate in the first 600mm of soil, development works such as excavation, contamination or soil compaction will result in detrimental effects to trees in close proximity. Age, species, and condition are all factors which affect the level of tolerance trees have to disturbance of their rooting system. The protection measures prescribed within this document have been made in accordance with **BS 5837:2012 "Trees in relation to design, demolition and construction – Recommendations."**
- 4.2.3. This assessment will address the following items:
- Potential damage arising from mechanical activities such as excavations and demolition.
 - The installation of services and any trenching required facilitating this.
 - Changes in soil height and the installation of new surfaces.
 - Sunlight and shading of buildings and amenity areas i.e. patios, conservatories, gardens, play areas etc.
 - The location of new access, welfare facilities and parking.
 - Future tree growth
 - Potential future pressure on the retained tree population.
 - Health, Safety and seasonal nuisance.
 - The storage of materials.



4.3. Tree retention/removal

	A Grade	B Grade	C Grade	U Grade
Tree No's to be retained	T15	T1, T2, T10, T9, T11 & T16	G1, G2, H1, T3, T4, T5, T12, T13, T14, T18 & T20	T21, & T19

	A Grade	B Grade	C Grade	U Grade
Tree No's to be removed	N/A	N/A	N/A	T8 & T16

4.3.1. Two category **U** trees have been identified for removal. **T8** and **T16** have irremediable defects which predispose them or component parts of their structure to failure. The loss of these trees may be mitigated through supplementary planting elsewhere at the site if appropriate.

4.3.2. The other category **U** trees which have been identified by the survey are not required to be removed to facilitate the construction of the proposal. However, these trees have significant biomechanical defects or are in such a condition that their removal may be advisable in the future.

4.4. Tree pruning works

	A Grade	B Grade	C Grade	U Grade
Tree No's to be pruned	T15 (reduce eastern canopy away from driveway by 1.5m)	N/A	T18 (Trim to maintain shape and current size)	N/A

4.4.1. Some minor pruning works are required to the eastern canopy of **T15**. This work has been recommended in order to safeguard the canopy of the tree from potential mechanical injury.

4.4.2. The reshaping and pruning of the canopy of **T18** has been recommended to ensure that it is maintained at its current size. This has been specified in light of the installation of the arched window on the western elevation of the Coach House.

4.4.3. The location of trees to be removed/retained and trees or hedges requiring pruning can be viewed on the **Tree Retention/Removal Plan** found in **Appendix B**.

4.4.4. The submission of this document and the tree works recommended within the **Tree Survey Schedule**¹⁵ in connection with a planning application should be construed as a formal application to conduct these works. This should be confirmed in writing with the LPA prior to the commencement of works.

¹⁵ Appendix A



4.5. Effect of new building/buildings on amenity at or near the site

- 4.5.1. The proposal does not require the construction of any new buildings at the site. Subsequently, I do not perceive the proposal to have any detrimental effect on the amenity of the site or surrounding area. The Coach House and worksite boundaries are defined by large boundary walls and mature groups of trees and shrubs. These features provide good separation from nearby roads, properties and public areas.
- 4.5.2. I do not perceive the proposed tree losses and pruning works to have any long-term detrimental effects on the surrounding landscape or the overall tree character of the site. The trees which have been identified for removal¹⁶ have biomechanical defects and hazardous structure components which in my professional opinion pose an unacceptable risk to the public, persons using the garden and neighbouring properties. The minimal reduction in tree population numbers arising from initial tree works can be easily mitigated through supplementary planting during the final landscaping stage of the site development process.

4.6. Proximity of trees to structures

4.6.1. Direct and indirect impacts of trees

- 4.6.1.1. Roots do not have the ability to directly damage heavily loaded structures, however, lightly loaded structures such as paths, small garden walls, and driveway surfaces may be disrupted by incremental root growth.
- 4.6.1.2. The juxtaposition between the Coach House and adjoining buildings will not change as a result of the proposed works. No new buildings are proposed to be constructed at the site. Both the new Oak Timber Coach House entrance and the small patio area adjoining the new northern access to the coach house maintain good separation from any of the retained trees growing at the site.
- 4.6.1.3. Considering the points discussed in this section, I do not perceive direct or indirect tree impacts to be a constraint on the proposal.

4.6.2. Shading and seasonal nuisance

- 4.6.2.1. I have used proprietary software and the tree survey data to calculate a shade segment for each tree., this has then been overlaid onto the **Tree Constraints Plan** (shading) found in **Appendix B**. This segment indicates the area which is likely to be affected by shading from trees for a portion of the day.
- 4.6.2.2. The Coach house is orientated in such a way that it is not affected by shading from neighbouring trees. I have assessed the proposed fenestration of the building which is to increase with the addition of the arched window on the western elevation of the Coach House. The Coach House is not directly affected by shading caused by trees and light levels within the building will be appropriate.

¹⁶ T8 and T16



- 4.6.2.3. The adjoining outbuildings/potting sheds are shaded by a number of trees located to the west of the main drive. This relationship will not change as a result of the proposed works. The adjacent trees are mature and have diffuse canopies which do not cast a dense shade. The shade segments of these trees indicate that shading is only likely to affect the southernmost outbuilding/potting shed in the late afternoon and not during the entire day.
- 4.6.2.4. The current leaf fall across the site is not perceived to change from its current situation. Gutter guards and low maintenance gutter systems may be adopted to reduce leaf build up where appropriate.
- 4.6.2.5. Shading and seasonal nuisance will not change from its current situation as a result of the proposed works. Therefore, I do not consider it to be a significant constraint on the proposal.

4.6.3. Future pressure to prune or fell

- 4.6.3.1. The juxtaposition between the Coach House and outbuildings/potting is not perceived to change because of the proposal. The proposal is located within the informal rear garden of the property which is under normal management.
- 4.6.3.2. Considering the points discussed in this section, the design of the proposal and its location, I do not perceive there to be significant pressure to fell or prune any of the retained trees outside of their regular management regime.

4.7. Tree protective measures

- 4.7.1. The methods of demolition and construction may potentially have a detrimental impact on the biological function of the retained tree stock. With this in mind, thorough tree protective measures are required to provide adequate protection to the trees and avoid potentially harmful incidents. In order to fully comply with BS 5837:2012 and to ensure that the retained tree stock is afforded the highest level of protection throughout the development process, appropriate tree protective fencing has been prescribed in order to establish a construction exclusion zone around the retained tree stock. The locations of tree protective measures and construction exclusion zones may be viewed on the **Tree Protection Plan** contained within the appendices of this document.
- 4.7.2. All tree protective barriers and ground protection is to be erected or installed as specified in **BS 5837:2012** (section 6.2) in the locations specified by the **Tree Protection Plan** contained in **Appendix B**. This must be carried out prior to the arrival of any materials to the site, demolition, development or any other non-arboricultural works occurring at the site.
- 4.7.3. An example of appropriate tree protective fencing is provided within **Appendix C (Figure 1)** of this document. Warning signs shall be attached to the fence at appropriate intervals to specify its purpose. An appropriate all-weather warning sign which is to be affixed to the fence is provided within **Appendix C (Figure 2)** of this document.
- 4.7.4. An **Arboricultural Method Statement** has been constructed by myself which specifies robust tree protective measures and details the processes of its construction.
- 4.7.5. As long as these tree protective measures are adhered to, and that a regular regime of arboricultural supervision is implemented, I do not anticipate any long-term negative impacts upon any of the retained trees located at the site.



4.8. Works required in or near Root Protection Areas (RPA'S)

- 4.8.1. Damage to the rooting system of a tree can have a significant detrimental effect on a tree's biological function. Processes such as mechanical excavations and resultant compaction can lead to loss of root system, anaerobic soil conditions and tree instability. The vast majority of a tree's major roots are within the first 3m of the tree's stem base, after this point, the tree root system is heavily branching and of a significantly smaller diameter. The vast majority of a tree's roots proliferate in within the first 600mm of soil. However, this can change depending on soil conditions i.e. High Water Table or shallow Bedrock.

4.8.1. Site access and vehicular movement

- 4.8.1.1. The existing property driveway comprises of a gravel wearing surface and compacted sub-base. The driveway is in regular use from a range of vehicles. In my opinion, I believe the driveway surface to provide adequate protection to the tree roots which have likely proliferated below it. Subsequently, I do not perceive a requirement for supplementary ground protection. However, with this in mind, vehicles exceeding 3.5 tonnes should not be allowed to access the site. Therefore, avoiding potential damage to the existing driveway and compaction of the soil horizons below it.

4.8.2. Renovation of Coach House and Outbuildings/Potting Shed

- 4.8.2.1. Significant renovation work is proposed to take place to the Coach House and Outbuildings/Potting Shed. This work is primarily associated with internal works and some minor alterations to the outside of the buildings. The renovation works to both the inside and outside of the buildings is located well away from the vast majority of the retained trees growing at the site. I am of the opinion that these works have little scope to cause significant harm to the retained trees population.

4.8.3. Excavation of existing service trench

- 4.8.3.1. An existing service run is proposed to be re-excavated for the purpose of installing new services to the Coach House and adjoining Outbuildings/Potting Shed. The existing service run consists of a drainage channel and a number of circular cast iron manhole covers which lead from a modern inspection cover located close to the eastern wall of the main house. The existing and proposed service run location is highlighted in orange on the accompanying **Tree Constraints, Tree Retention Removal and Tree Protection Plans** which can be found in **Appendix B** of this document.
- 4.8.3.2. The service run highlighted in orange on the accompanying plans is displayed as passing through the theoretical root protection areas of retained tree numbers **T10** and **T15**. However, there is a brick wall located to the west of the existing service trench¹⁷. The brick wall appears to be the same age as the main house and Coach House. The purpose of the brick wall is to define the garden and driveway boundary. I inspected the wall and found it to comprise of five courses of above-ground brickwork and one course of foundation brickwork laid below ground level. The brick wall retains a significant amount of garden soil and measures a height of 400mm above ground level. When combined with the subterranean brick course, this gives the wall a total height as 480mm.
- 4.8.3.3. The subject wall predates the trees growing on the raised ground to the west of the subject wall by a considerable amount. Subsequently, I believe the position of the wall to have acted as a barrier to roots which would otherwise proliferate into the area around the existing service trench. I noted a number of other factors regarding the driveway and existing service trench which I would also consider as being inhibiting to root growth.

¹⁷ Figure 2, Appendix C



- 4.8.3.4. Whilst observing the existing service trench I noted that it contained a large amount of water. This is despite having a protracted period of extremely hot weather leading up to and during my visit to the site. This corroborates the high water table indicated as being present at the site by the British Geological Survey study session. Waterlogged ground conditions are inhibiting to the root growth of most species of trees. The existing driveway surface comprises of a concrete wearing course which is non-permeable resulting in anaerobic conditions in the soil beneath it.
- 4.8.3.5. A substantial brick and flint wall is located on the eastern side of the driveway where it runs in a north-south direction defining the eastern property boundary.
- 4.8.3.6. Considering all of the points discussed in this section, I believe the presence of substantial tree roots in the vicinity of the concrete driveway, existing and proposed service trenches to be highly unlikely. As a result, I propose that a normal method of construction may be adopted for the excavation of the service trench.
- 4.8.3.7. Despite this, a cautionary approach to all excavations on site should be adopted. In the instance that widening of the existing service trench is required, it should be excavated on the eastern side of the trench only. This will negate the possibility of causing root disturbance on the side of the trench nearest to the retained trees.

4.8.4. Removal and replacement of driveway surface

- 4.8.4.1. The proposed removal and reinstatement of the driveway wearing surface is to include the breaking up and removal of the existing concrete surface and the reinstatement of a gravel wearing course. Considering the points discussed in the following section (4.8.3) I perceive the presence of substantial tree roots below the existing driveway to be highly unlikely. As a result, I propose that a normal method of construction and demolition be adopted for the driveway works.
- 4.8.4.2. All works can be confined to the existing driveway surface, therefore, negating the need to enter unprotected ground or any other part of the site. Due to the nature of the current wearing surface, it is my opinion that mechanical removal is appropriate in this instance. A small mini digger with a gross weight which does not exceed 2.5 tonnes should be used to break up the current wearing surface. The machine may be fitted with a hydraulic breaker head as I perceive the likelihood of tree roots beneath the existing driveway to be highly unlikely. The breaking up of the current driveway surface should be conducted in an organised manner whereby the machine is able to remain on the existing driveway surface at all times.
- 4.8.4.3. It is favourable to remove the broken-up material by hand. However, it may be appropriate to use a small skip loading dumper to remove the waste material from the site. The dumper should only operate from the existing driveway and under no circumstances operate outside of this area. The driveway sub-base if appropriate, may be left in situ and used for the laying of the new gravel wearing surface.
- 4.8.4.4. The new wearing course for the driveway is to consist of gravel. This should be laid by hand without the use of mechanical compaction. However, it may be appropriate and convenient to spread the gravel using the mini-digger whilst it is on site.
- 4.8.4.5. As long as the prescribed measures are adhered to, I perceive there to be a low risk of long-term detriment to any of the retained trees.



4.8.5. Construction of small patio

- 4.8.5.1. The proposed patio which is to be constructed in the small rear garden area behind the north elevation of the Coach House is located outside of the root protection areas of the retained tree population. Subsequently, I do not perceive any detrimental impacts arising from its formation in regard to the retained tree population.

4.9. Ground level changes

- 4.9.1. No significant ground level changes are proposed to occur at the site as a result of the renovation or excavation works. However, any excavated soil should be removed from the site or spread evenly well away from the root protection areas of any of the retained trees growing at the site.

4.10. Services and their installation

- 4.10.1. No new service runs other than those previously discussed are planned or anticipated within or close to any of the retained trees at the site.
- 4.10.2. In principle, all service runs and other utilities shall be orientated away from trees and their RPA's. All works should be conducted in accordance with the principles set out in NJUG Volume 4 – Guidelines for the planning, installation and maintenance of utility services in proximity to trees (National Joint Utilities Group 2007). Where possible existing service runs will be re-used, any alterations made will first require consultation of the appointed Arboricultural Consultant and the notification of the LPA.

4.11. Visual impact on the landscape and tree character

- 4.11.1. Due to the dense tree cover around the site and the low number of trees to be either pruned or removed, I perceive the impact of the proposal on the landscape and local tree character to be low.
- 4.11.2. Any trees proposed for removal may be replaced with supplementary planting in order to ensure continuity of tree cover.

4.12. Conclusion

- 4.12.1. The arboricultural impact of the proposal on the retained trees and character of the landscape is perceived to be low. An arboriculturally sensitive manner can be adopted and implemented across the site during the renovation and construction process. As long as the methodologies discussed within this assessment are adhered to, the development can be carried out with little long-term detrimental impact to any of the retained trees, and in an arboriculturally acceptable manner.
- 4.12.2. The retained tree population can be afforded an adequate degree of protection throughout the implementation of the proposal through proper education of the works contractors and through regular site monitoring from the appointed Arboricultural Consultant as well as the property owner.
- 4.12.3. I have reduced the theoretical roots protection areas of **T10** and **T15** to reflect the line of the existing garden wall which I perceive to have acted as an impermeable barrier to tree roots. This change can be viewed on the **Tree Protection Plan** provided in the appendices of this document.



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Arboricultural Method Statement

39, Havant Road, Emsworth, Hampshire, PO10 7JD

Dated

18th September 2017

To be displayed prominently on site and
brought to the attention of all employees,
contractors and sub-contractors

This document is to be used in conjunction with the following documents:

- Tree Survey Schedule
- Tree Retention/Removal Plan ref: Q12978/TRRP/27-6-17_V1
- Tree Constraints Plan ref: Q12978/TCP/27-6-17_V1
- Tree Protection Plan ref: Q12978/TPP/15-9-17_V1

Note:

After approval from the Local Planning Authority, this Arboricultural Method Statement becomes an official document. Consequently, the methodologies prescribed within it must be conducted as stated and carried out to their fullest extent as described. A copy must be retained by the Site Supervisor for reference and made available at all times for employees, staff and sub-contractors.



1. Summary

- 1.1. The purpose of this method statement is to safeguard retained trees and their below and above ground structures. The recommendations made in this report aim to guide the construction process in areas near to or within the root protection areas of retained trees. The second purpose of this method statement is to minimise the impact of construction activity on the tree population retained on site.
- 1.2. The excavations made for the construction of foundations on any site where trees are present may lead to the damage and removal of roots. Any form of damage or root loss should be avoided where possible. Where the likelihood of this is high, a methodology of construction which minimises the impact of root damage/loss is required to be followed.
- 1.3. This Arboricultural Method Statement has been constructed in accordance with **BS 5837:2012 "Trees in relation to design, demolition and construction – Recommendations."**
Further guidance has been taken from the following documents:
 - **BS 3998:2010 "Tree Work – Recommendations."**
 - **National Joint Utilities Group "Guidelines for the planning, installation and maintenance of utility services in proximity to trees, 1995."**
 - **Trees in Hard Landscapes: A Guide for Delivery.**
 - **Trees in Focus, APN12, Through Trees to Development**
 - **BS 8545:2014 Trees: from nursery to independence in the landscape-Recommendations.**

2. Site-specific considerations

- 2.1. A construction exclusion zone (**CEZ**) identified as a blue striped area has been established around the retained trees and their theoretical root protection areas. All construction activity including the storage of materials must be excluded from these areas unless otherwise agreed.
- 2.2. All agreed tree works and tree protective measures must be in situ prior to the commencement of the development process including the delivery of materials to the site. Full details regarding the extent of each tree's root protection area can be found in the **Tree Survey Schedule** section provided within **Appendix A** of this document. Details regarding the prescribed tree works may also be found within the same section.
- 2.3. Initial access to the site can be achieved via the gravel driveway leading from Havant Road, this will provide adequate access to the tree team for the purpose of conducting the agreed tree works. No heavy machinery including dumpers, excavators or tracked vehicles is to enter the site during the tree works phase. Arising's can be removed from the site using suitable wheeled vehicles. These vehicles must not operate outside of the confines of the existing driveway, neither should they exceed a gross weight of 3.5 tonnes.



3. Sequenced methods of construction and tree protection

3.1. Pre-commencement meeting

Arboricultural supervision required

An onsite meeting will be held, attendees will include all relevant parties. Parties should include the appointed Arboricultural Consultant, the contractor, property owner and local planning authority representative. The purpose of the site meeting is to agree on the formalities of the proposal, agree on tree works, the location of access both permanent and temporary, site storage locations, the location of tree protection barriers, time schedules and any particular constraints the site may pose. This meeting will also be used as an opportunity to discuss the tree related constraints in detail with the contractors.

3.2. Conduct Agreed Tree Works

3.2.1. The prescribed tree works are to be conducted prior to the main construction process. The prescribed tree works should be conducted in strict accordance with the **Tree Schedule** provided in **Appendix A**.

3.2.2. The following table details the initial tree works recommended to facilitate the development. of the proposal.

Tree No	Tree ID	Works	Reason
T8	Austrian Pine (<i>Pinus nigra</i>)	Fell to ground level and remove all arisings.	To remove risks associated with the tree.
T16	Silver Birch (<i>Betula pendula</i>)	Fell tree to ground level and remove all arisings.	To remove risks associated with the tree.
T15	Cornelian Cherry (<i>Cornus mas</i>)	Reduce eastern canopy away from driveway by 1.5m	To reduce the risk of mechanical damage and to improve access to the site.
T18	Bay (<i>Prunus nobilis</i>)	Trim the canopy of the tree to maintain its shape and size.	Normal maintenance of tree.

3.2.3. The locations and individual identification numbers for each tree included within the survey conducted at the site can be found in the **Tree Survey Schedule** contained within **Appendix A** of this document. A copy of the schedule and **Tree Retention/Removal Plan**¹⁸ should be provided to the appointed Tree Contractor by the developer.

3.2.4. Further details regarding prescribed tree works can be found in the accompanying **Tree Survey Schedule, Appendix A**.

¹⁸ Q12978/TRRP/27-6-17_V1



- 3.2.5. All tools and machinery must be disinfected using a proprietary arboricultural disinfectant prior to arrival and leaving the site. All pruning equipment should also be disinfected prior to changing trees or work locations.
- 3.2.6. All tree works should to be conducted by a fully qualified and insured arboricultural contractor conforming to BS 3998: 2010 “Tree Work – Recommendations.” The contractor should prepare and fill out all necessary Risk Assessments appropriate for the task/tasks and adhere to current health and safety standards. A list of Arboricultural Association approved contractors can be found on their website www.trees.org.uk. At no point shall the tree be pruned or cut in any way by construction contractors.

3.3. Erect Tree Protection Barriers

Arboricultural supervision required

- 3.3.1. Tree protective measures must be installed prior to:
- The delivery of materials and plant to the site.
 - Demolition of existing structures or the removal of hard surfacing.
 - Construction in any form.
 - The installation of services or drainage.
 - Landscaping works.
- 3.3.2. Tree protection barriers are to be erected in the locations specified in the **Tree Protection Plan (Q12978/TPP/15-9-17_V1)** provided in **Appendix B** of this document. The protection barriers will conform to the guidance set in **BS 5837:2012 “Trees in relation to design, demolition and construction – Recommendations.**
- 3.3.3. The barrier fences should consist of weld mesh (Heras type) panels mounted on rubber brick feet and supported by diagonal bracing poles pinned into the ground as indicated in **Appendix C, (Figure 1)** of this document.
- 3.3.4. I have made no assessment of potential underground services in the proximity of the prescribed tree protective fencing. Consequently, the areas where fencing is to be erected should be scanned for underground services prior to erection.
- 3.3.5. A supplementary layer of netting should be attached to the outside of the tree protective barriers to inhibit spoil or other material passing through the weld mesh panels and into the protected rooting zones of the trees.
- 3.3.6. All weather warning signs such as those in **Appendix C, (Figure 2)** are to be placed upon the fencing every 10m. The purpose of these signs is to inform staff and contractors as to the purpose of the tree protective barriers.
- 3.3.7. In certain circumstances, it may be appropriate to incorporate site boundary fences, hoarding or temporary site offices. This must be confirmed with the LPA and be installed/removed without causing damage to the retained trees.



- 3.3.8. The setting out of the root protection barriers and ground protection is to be conducted by the contractor and Arboricultural Consultant. Its position is to be demarked using biodegradable marker paint according to the dimensions represented in the survey. Erection of the barriers will take place prior to any works other than the prescribed tree works occurring. This includes demolition and delivery of materials, plant or equipment.
- 3.3.9. The Local Planning Authority should be informed by the appointed Arboricultural Consultant of installation and construction of the tree protective barriers once they are in situ and prior to the commencement of any development activities at the site.
- 3.3.10. Once erected all tree protective measures are to be treated as sacrosanct and under no circumstances moved without consulting the Arboricultural Consultant and the notification of the Local Planning Authority.

3.4. Construction exclusion zone

- 3.4.1. The final location of the tree protective barriers will be used to define a **Construction Exclusion Zone**¹⁹. The purpose of this zone is to ensure that the protected trees and their rooting zones remain undamaged throughout the development process.
- 3.4.2. The following activities must ***NOT*** be allowed to occur inside of the **Construction Exclusion Zone**:
- ***The raising or lowering of soil levels***
 - ***The positioning of machinery of any size***, unless supplementary ground protection has been installed, approved and recommended within this Arboricultural Method Statement or previously agreed by the appointed Arboricultural Consultant and LPA.
 - ***Mechanical excavations of any kind***
 - ***Excavations conducted by hand*** (unless specifically approved within this Arboricultural Method Statement).
 - ***The construction of foundations*** (unless specifically approved within this Arboricultural Method Statement).
 - ***Excavations for the installation of services including drainage or conduits*** (unless specifically approved within this Arboricultural Method Statement).
 - ***The storage of plant, machinery or tools*** unless supplementary ground protection has been installed.
 - ***The storage of spoil*** unless supplementary ground protection has been installed.
 - ***Vehicular access*** unless supplementary ground protection has been installed.
 - ***The mixing of materials, spillage or discharge of chemicals or harmful substances.***
- 3.4.3. No fires are to be lit on site.
- 3.4.4. No signs, service cables or other items will be attached to any part of the tree being retained.

¹⁹ Indicated as a blue striped area on the accompanying **Tree Protection Plan (Q12978/TPP/15-9-17_V1)**



3.5. Main construction process

- 3.4.1. The Site Manager will be responsible for informing all staff, contractors, sub-contractors and visitors as to the importance and locations of the retained trees located at the site.
- 3.4.2. A normal method of construction can be adopted across the site where there is no impingement of tree root protection areas. These areas have been plotted on the accompanying plans found in **Appendix B** of this document. The accompanying **Tree Survey Schedule** contains information on the dimensions of each tree's root protection area.
- 3.4.3. Where scaffolding is to be erected close to a retained tree(s) it must be conducted following consultation of the appointed Arboricultural Consultant and installed as per his/her advice. Once in situ its construction and location shall be recorded photographically and used to inform the LPA where potential tree related conflicts arise. As the location of scaffolding is not yet confirmed, this process of monitoring will reduce the potential for tree-related harm and maintain an informed relationship between the project and LPA.
- 3.4.4. The developer/site manager will instruct the appointed Arboricultural Consultant to attend site during any potentially arboriculturally sensitive events. The tree protective measures and locations of storage materials including areas used for the mixing of chemicals will be checked regularly in regard to the sites general operation.
- 3.4.5. Fires on the site will be avoided unless absolutely necessary. Where fires are unavoidable, they should be positioned where heat cannot conduct onto nearby trees and affect their foliage, rooting environment or structures. All fires should be attended at all times until they are reduced to the point where they are safe to leave.
- 3.4.6. A 10m separation between any tree retained at the site during the mixing of cement. This 10m separation shall also be maintained between storage areas containing cement or other potentially harmful substances such as fuels, tar, oil, builders sand and cement washings.
- 3.4.7. Care should be taken when planning site operations in close proximity to trees. This includes the passage of machinery and the lifting of objects and materials. The appointed arboriculturist should be informed when potentially harmful operations are likely to occur during the construction process.
- 3.4.8. **At no point may any part of a retained tree be cut or pruned by staff, contractors or sub-contractors.**



3.6. Excavation of service trenches

Arboricultural supervision required

- 3.6.1. A normal method of construction for the process of excavating the existing service trench can be adopted. However, in principle, the following cautionary methods should be adhered to.
- 3.6.2. A mini-digger with a gross weight not exceeding 2.5 tonnes will be used to mechanically excavate the existing service trench.
- 3.6.3. The mini-digger shall operate from the existing driveway surface working backwards away from the Coach House in a methodical manner. Any excavated material shall be either removed from the site or stockpiled well away from any of the retained trees.
- 3.6.4. Any widening of the existing service trench, if required, must be conducted to the eastern side of its current route only.
- 3.6.5. A banksman should be employed during this operation to ensure that the machine does not enter unprotected ground or come into contact with any of the retained trees.
- 3.6.6. All soakaways, drainage ditches, pipes and their ancillary equipment etc, will be kept outside of the root protection areas across the entire site.
- 3.6.7. The installation of services into the excavated trench shall be undertaken by hand.
- 3.6.8. All utilities and underground services should be orientated outside of construction exclusion zones and away from tree root protection areas unless already agreed and discussed in detail
- 3.6.9. Where installation within root protection areas is unavoidable, it must be conducted in accordance with the guidelines prescribed in **NJUG Volume 4 Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees** and under the supervision of the appointed Arboricultural Consultant after the Local Authority Tree Officer has been notified.
- 3.6.10. A contractor's guide to the excavation of services around trees can be found at the following address:
<https://njug.org.uk/wp-content/uploads/2016/09/V4-Trees-Issue-2-16-11-2007.pdf>
- 3.6.11. Any incursion into the root protection area of retained trees for any purpose other than those agreed must be brought to the attention of the appointed project Arboricultural Consultant and Local Authority Tree officer as soon as possible.
- 3.6.12. In the event that tree roots are discovered during the process of excavation, the appointed Arboricultural Consultant must be informed immediately. After consultation, it may be appropriate if directed to prune roots with a diameter not exceeding 25mm using a **SHARP** set of bypass secateurs. Roots with a diameter greater than 25mm must not be severed without the consultation of the appointed Arboricultural Consultant. Tree roots with a diameter greater than 25mm should be worked around and protected once they have been exposed. A covering consisting of damp hessian should be placed around exposed tree roots in order to reduce the chance of them becoming dried out.



3.7. Removal and replacement of driveway surface

Arboricultural supervision required

- 3.7.1. A mini-digger with a gross weight not exceeding 2.5 tonnes will be used to mechanically remove the existing concrete driveway wearing course. The process of its removal should be conducted in the same fashion as the excavation of the service trenches as detailed in the section above.
- 3.7.2. The mini-digger may be fitted with a hydraulic breaker which can be used to break up the existing concrete wearing course. The mini-digger shall operate from the existing driveway surface working backwards away from the Coach House in a methodical manner. Any excavated material shall be either removed from the site or stockpiled well away from any of the retained trees.
- 3.7.3. At no point, shall the mini-digger or other machinery enter the remainder of the site or any other unprotected ground without the prior consultation of the project Arboricultural Consultant. The digger arm and or any other attachment hitherto connected to it shall **not** enter the root protection areas of any of the retained trees under any circumstance.
- 3.7.4. A banks man should be employed during this operation to ensure that the machine does not enter unprotected ground or come into contact with any of the retained trees.
- 3.7.5. At no point is the machine to enter the exposed driveway sub-base layer neither shall it be used at any point to grade this layer. Broken out concrete should be removed from the site as the process proceeds. In this way, no sections of concrete are left on the exposed driveway sub-base or stacked elsewhere on the site. It is favourable to remove the broken-up material by hand. However, it may be appropriate to use a small skip loading dumper to remove the waste material from the site. The dumper should only operate from the existing driveway and under no circumstances operate outside of this area. The driveway sub-base is to be left in situ and used for the laying of the new gravel wearing surface.
- 3.7.6. The new wearing course for the driveway is to consist of gravel. This should be laid by hand without the use of mechanical compaction. However, it may be appropriate to spread the gravel using the mini-digger whilst it is on site.
- 3.7.7. After the removal and reinstatement of the existing driveway wearing course has been undertaken, no further mechanical access to the site should be required.



3.8. Hard surfacing

Arboricultural supervision required

- 3.8.1. All new hard surfacing should take into account future tree growth and preferably be maintained at a sufficient distance from neighbouring trees.
- 3.8.2. New surfaces around new planting requiring the ability to carry significant loads such as roads, turning circles and parking spaces may require the installation of a subterranean proprietary support system or structural soil. Further protection of tree pits around newly planted trees where pedestrian traffic is likely to be high may require the installation of tree grilles. Care must be taken to ensure that contaminants such as de-icing salt or fuels do not enter tree pits either during planting or after the site landscaping works have been completed.
- 3.8.3. Any new surfacing within tree root protection areas should be strongly discouraged. Where hard surfacing is unavoidable it should not exceed the 20% threshold as specified in section 7.4.2 of **BS 5837:2012** unless specialist engineering techniques are used. New hard surfacing should consist of a porous and permeable material which incorporates proprietary 2D load bearing systems which may be constructed without the requirement for excavations. A separate Arboricultural Method Statement will be required in order to facilitate this type of works.

3.9. Dismantling of protection measures

Arboricultural supervision required

- 3.9.1. Protective fencing and ground protective measures will only be removed upon completion of all groundworks and prior to any final landscaping.
- 3.9.2. The dismantling of fencing and ground protection must be conducted by hand and in a conscientious manner taking care not to damage any of the retained trees. No machinery is to be used in the dismantling of the barriers and at no point may any form of machinery enter the root protection area of the retained trees.



3.10. Landscaping and new planting

- 3.10.1. Every effort must be made to ensure that no significant soil height level changes occur on site. Spoil should either be removed from the site or spread in a location away from retained trees. Any significant soil height changes in close proximity to or within the root protection areas of the retained trees will require consultation with the appointed Arboricultural Consultant and the notification of the Local Authority Tree Officer.
- 3.10.2. Before the start of construction, it is advisable to set aside areas where new planting is proposed. These areas can then be protected to ensure that the soil horizons into which the new planting is established are not compacted.
- 3.10.3. Areas, where soil compaction has taken place but are proposed for replanting, will require soil amelioration prior to planting. Soil decompaction using soil displacement technology such as Airspade will be necessary to improve the rooting environment of new trees and shrubs prior to their planting.
- 3.10.4. The deep cultivation of soil within the tree root protection area must be avoided unless conducted carefully by hand. Machines such as rotavators are not to be used for the cultivation of soil in close proximity, or within tree root protection areas.
- 3.10.5. Herbicides used for the killing of unwanted herb layer should be appropriate for their intended use and applied by a fully qualified contractor taking special care not to spray or damage any of the retained trees.
- 3.10.6. Dead vegetation should be removed carefully by hand without the use of machinery. No penetration of the soil below the unwanted vegetation may occur
- 3.10.7. New beds and areas of new planting should be mulched using a 100mm deep well composted organic woodchip mulch. This layer will reduce weed growth and retain moisture for new planting. Mulch layers should be topped up accordingly to maintain an effective thickness of 100mm at all times.
- 3.10.8. No irrigation or drainage pipes are to be installed within the root protection areas of the retained trees.
- 3.10.9. New tree planting should be carried out in strict accordance with **BS 8545:2014 Trees: from nursery to independence in the landscape-Recommendations**. Appropriate support measure should be employed for all new trees at the site. This should also conform to the specification contained within **BS 8545:2014**. All new tree planting should be subject to a minimum of a two-year aftercare plan in order to ensure successful establishment of new trees.



3.11. Fencing and boundaries

- 3.11.1. The installation of domestic fencing where required within the CEZ, once barriers have been removed shall be conducted by hand. All post holes will be dug by hand ensuring that they remain the minimal size practicable (10%) larger than the posts being inserted. Post holes will be lined with an impermeable membrane with a minimum thickness of 200 microns before any concrete or similar is used. This will ensure no damaging leachate from the curing concrete can enter the surrounding soil.
- 3.11.2. Roots with a diameter less than 25mm may be cut back using a sharp set of bypass secateurs
- 3.11.3. Fencing will also take into account the location of the trees and likely morphology of tree root structure. Fencing should deviate or bridge where necessary to ensure an appropriate distance is maintained from neighbouring trees.
- 3.11.4. All materials including cement should be stored outside of root protection areas and only brought in piecemeal as needed during the construction process.



3.12. Sequencing, monitoring, and supervision

3.12.1. In order to ensure that the tree protective measures and methodologies prescribed within this method statement are conformed to, a series of monitoring intervals and regular site visits will be established.

3.12.2. All works which have the potential to harm trees may require arboricultural supervision.

3.12.3. Regular site visits will be recorded by the Arboricultural Consultant, a copy of the site inspection form can be found in **Appendix C, Figure 3**. Recorded site visits will be attached to the AMS and remain available for inspection during the construction process.

3.12.4. Events requiring supervision are as follows:

Event	Supervision	Reason
Pre-commencement meeting	Arboricultural Consultant, Contractor, Client and LPA representative	To agree on tree works, protective measures and any other site constraints
Erection of tree protective measures	Arboricultural Consultant and Contractor	To ensure correct instalment in prescribed locations, correct construction of measures and to monitor works.
Excavation of service trenches	Arboricultural Consultant and Contractor	To ensure correct instalment in prescribed locations and to monitor works.
Removal/replacement of driveway surface	Arboricultural Consultant and Contractor	To ensure that the concrete surface is removed safely and the new wearing course is appropriately constructed according to the AMS and that no obvious tree conflicts arise.
Hard surfacing	Arboricultural Consultant and Contractor	To ensure an arboriculturally sensitive approach to the installation is maintained throughout the construction process
Dismantling of tree protective measures	Arboricultural Consultant and Contractor	To ensure that tree protective measures are safely dismantled in a conscientious manner.



3.13. Amendments

3.13.1. Due to the nature of development issues sometimes arise which may require the amendment of previously agreed tree protection details or methods of working. In this instance, any alterations must be discussed with the appointed Arboricultural Consultant and approved in writing by the LPA prior to being implemented. Copies of amendments must be retained and attached to the site copy of the AMS as a definitive record of what has been agreed.

3.14. Communication details, monitoring & compliance

3.14.1. All relevant parties will be informed as to any amendments to the design or proceedings throughout the duration of the project.

3.14.2. An Arboricultural Consultant should be retained during the entire development process. His roles will be as follows:

- Supervision by an Arboricultural Consultant is to take place during any excavation near to any retained trees or in proximity to existing RPA's.
- Weekly site inspection is to take place and will include monitoring of tree protection fencing, ground protection measures and construction exclusion zones. Site visit times will be recorded using the form provided. **Appendix C, Figure 3.**
- Photograph the site and the protection methods employed in order to inform the LPA that works are being conducted in accordance with the methodology prescribe within this report.

3.15. Queries

3.15.1. Any uncertainty, queries or questions regarding this AMS should be addressed initially to Christopher Hoare Tree Service Ltd:

Christopher Hoare Tree Services Ltd
The Estate Office
Exbury Gardens
Summer Lane
Southampton
Hampshire
SO45 1AZ

Telephone: 02380 897933
Email: Info@chtstrees.co.uk



Appendix A



Survey Schedule

BS5837:2012 Tree Survey

Christopher Hoare Tree Servis

Client: Simon O'Hea
 Project: 39 Havant Road
 Survey Date: 26/06/2017
 Surveyor: Oliver Lower



The Estate Office
 Exbury Gardens
 Exbury
 Hampshire
 SO45 1AZ
 Phone: 02380 897933

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
G1	N/A													
A Group		3.2	0		N	1	0	M	A: 0	Fair	C: Good	No action :: Unspecified		C.2
- -					E	1	0		R: 0		S: Fair			10 to 20 yrs
					S	1	0				B: Fair	A mixed species linear group.		
					W	1	0							
G2	N/A											Estimated Measurements		
A Group		4	0		N	2	0	M	A: 0	Fair	C: Fair	No action :: Unspecified		C.2
- -					E	2	0		R: 0		S: Fair			10 to 20 yrs
					S	2	0				B: Fair	A mixed species group.		
					W	2	0							
H1	N/A													
A Hedgerow		2.5	2	70 (Eq)	N	0.5	0	M	A: 2.2	Good	C: Good	No action :: Unspecified		C.2
- Unknown					E	0.5	0		R: 0.83		S: Good			>40 yrs
					S	0.5	0				B: Good	A small Yew hedge adjacent to the main drive.		
					W	0.5	0							
T1	N/A													
Common Holly		9.1	1	240	N	4	1	M	A: 26.1	Good	C: Good	No action :: Unspecified		B.2
<i>Ilex aquifolium</i>					E	3.5	1		R: 2.88		S: Good			20 to 40 yrs
					S	4	1				B: Good	A Holly located adjacent to the driveway.		
					W	3	1							
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				

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T2 N/A													
Austrian Pine <i>Pinus nigra ssp. Nigra</i>	13.2	1	560	N E S W	8 7.4 8 6	8.8 13 5 8	M A: 141.9 R: 6.72	Fair	C: Fair S: Good B: Good	No action :: Unspecified ----- An Austrian Pine with uneven crown morphology.		B.2 20 to 40 yrs	
T3 N/A													
Apple <i>Malus Unknown</i>	5.15	1	180	N E S W	5 4.4 3 2.5	1.2 1.8 3 2.5	M A: 14.7 R: 2.16	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified ----- An Apple tree with Woolly Aphid		C.2 10 to 20 yrs	
T4 N/A												Estimated Measurements	
Silver Birch <i>Betula pendula</i>	16	1	380	N E S W	5 3.5 5 4	5.5 6 6 4.5	M A: 65.3 R: 4.55	Fair	C: Fair S: Ivy B: Fair	No action :: Unspecified ----- A suppressed Bich with codominant stem.		C.2 10 to 20 yrs	
T5 N/A												Estimated Measurements	
Common Holly <i>Ilex aquifolium</i>	9	1	180	N E S W	4.2 2.5 2 2	1.5 1.6 1.2 1.2	M A: 14.7 R: 2.16	Poor	C: Poor S: Fair B: Fair	No action :: Unspecified ----- A mature Holly in decline.		C 10 to 20 yrs	
T6 N/A												Estimated Measurements	
Silver Pendent Lime <i>Tilia petiolaris</i>	18.5	1	450	N E S W	5.2 4.6 5 5	2 3.5 2 2	M A: 91.6 R: 5.39	Good	C: Good S: Good B: Good	No action :: Unspecified ----- A Weeping Silver Lime located on adjacent property.		B.2 20 to 40 yrs	
T7 N/A													
Sycamore <i>Acer pseudoplatanus</i>	15.4	1	410	N E S W	5 4.5 2.7 5.9	4 4 3.6 5.6	M A: 76.1 R: 4.92	Fair	C: Fair S: Fair B: Good	No action :: Unspecified ----- Tree has a one sided canopy biased toward the north. Tree has been historically pollarded.		B.2 20 to 40 yrs	
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature			Condition:	C S B	Crown Stem Basal area	Stems:	Ø (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	

Tree and Tag No Species	Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
		No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T8 N/A												
Austrian Pine <i>Pinus nigra ssp. Nigra</i>	20.6	1	760	N E S W	5.3 5.3 7 6.5	7.8 6 8 7.8	M A: 261.3 R: 9.11	Poor	C: Fair S: Poor B: Poor	Fell :: Fell to ground level Tree has a profusion of resin bleeding and fibre buckling of main stem. Tree has disproportionate swelling of lower stem characteristic of internal decay.	U n/a	
T9 N/A											Estimated Measurements	
Whitebeam <i>Sorbus aria</i>	11	1	200	N E S W	3 3 3 3.2	1.8 1.8 1.8 3.5	M A: 18.1 R: 2.4	Good	C: Good S: Good B: Good	No action :: Unspecified A Whaitebeam located on neighbouring property behind large brick wall.	B.2 20 to 40 yrs	
T10 N/A												
Scots Pine <i>Pinus sylvestris</i>	12.5	1	500	N E S W	5 4.2 5 6	5 4.5 5 4.5	M A: 113.1 R: 6	Fair	C: Fair S: Ivy B: Good	No action :: Unspecified A mature Scots Pine located on raised ground opposite the driveway. Small brick retaining wall defines driveway edge.	B.2 20 to 40 yrs	
T11 N/A												
Sweetgum <i>Liquidamber styraciflua</i>	11.2	1	210	N E S W	3 1.2 4 4.9	1.6 1.6 1.6 1.6	SM A: 20 R: 2.52	Fair	C: Fair S: Good B: Good	No action :: Unspecified A semi-mature Liquidambar with poor stem morphology and a one sided canopy. Tree is located on raised ground adjacent to driveway.	B.2 20 to 40 yrs	
T12 N/A												
Crab Apple <i>Malus sylvestris</i>	7.5	1	170	N E S W	6 1 2.2 3.6	2 2 2 2	M A: 13.1 R: 2.04	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified A small tree with low vitality.	C 10 to 20 yrs	
T13 N/A												
Purple Crab 'Profusion' <i>Malus 'Profusion'</i>	6.4	1	200	N E S W	3 3.3 3 3	1.6 1.6 1.6 1.6	M A: 18.1 R: 2.4	Fair	C: Fair S: Fair B: Fair	No action :: Unspecified A small tree with low vitality.	C.2 10 to 20 yrs	
Age Classifications:	N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:	Ø (Eq)	Diameter Equivalent stem diameter using BS5837:2012 definition	

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T14	N/A													
Prunus 'Pink Perfection' <i>Prunus 'Pink Perfection'</i>	6.1	1	290	N	1.2	2	OM	A: 38.1 R: 3.48	Poor	C: Fair S: Poor B: Fair	No action :: Unspecified		C.2	
				E	3.2	2.2					Tree has low vitality and poor form included bark stem union noted at base. Tree has Pseudomonas syringae var 'Morsprunorum'. Tree is located on raised area of ground adjacent to the drive.		10 to 20 yrs	
				S	2.6	1.8								
				W	1.2	4								
T15	N/A													
Cornelian Cherry <i>Cornus mas</i>	6.5	1	360	N	5.4	1.3	M	A: 58.6 R: 4.31	Good	C: Good S: Good B: Good	Reduce lateral limbs :: By 1.5m to shape		A.1.2	
				E	4	1.5					Prune eastern canopy extending over driveway only. Prune using secateurs and pruning saw only. Pruning works must comply with BS 3998:2010		>40 yrs	
				S	3	1.3								
				W	3.6	1.3					A large Cornus mas with good vitality and form. Tree is located on raised ground adjacent to the driveway. Prune low canopy driveway side only to reduce risk of damage.			
T16	N/A													
Silver Birch <i>Betula pendula</i>	14.8	1	470	N	3.5	4	OM	A: 99.9 R: 5.63	Poor	C: Fair S: Poor B: Fair	Fell :: Fell to ground level		U	
				E	5	4.2							n/a	
				S	5	4.2					Tree has been historically pruned numerous times. Cavities noted in limb extending over garage at 5m agl. Tree has decayed main stem. Tree has low vitality and is colonised by Taphrina betulina. Tree poses a risk to the Coach House.			
				W	5	1.8								
T17	N/A													
Norway Maple <i>Acer platanoides</i>	11	1	300	N	4	2.17	M	A: 40.7 R: 3.59	Good	C: Good S: Good B: Good	No action :: Unspecified		B.2	
				E	4	2							20 to 40 yrs	
				S	3.2	2					An Acer platanoides 'Crimson King'. Tree has good form and normal vitality.			
				W	3.5	2								
T18	N/A													
Bay <i>Laurus nobilis</i>	3	2	113 (Eq)	N	1.6	1.5	M	A: 5.8 R: 1.35	Fair	C: Fair S: Fair B: Fair	Formative prune :: Improve Shape		C.2	
				E	1.6	1.5					Trim to maintain shape and current size		10 to 20 yrs	
				S	1.6	1.5								
				W	1.6	1.5					A small Bay tree stool. Trim to maintain shape and current size.			
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					

Report selection criteria.

Projects.

39 Havant Road

Date Range.

Any Date

Work types.

----> Fell :: Fell to ground level
 ----> Formative prune :: Improve Shape
 ----> No action :: Unspecified
 ----> Reduce lateral limbs :: By 1.5m to shape

Latest Survey.

All surveys for the selected trees.
 ---> Last survey for each selected tree.

Work Completed.

---> Work Completed
 ---> Work Not Completed

Number of trees in selected Project(s) 24

Number of trees in Report selection 24

Age Classifications:

N	Newly planted	EM	Early Mature
Y	Young	M	Mature
SM	Semi-mature	OM	Over Mature

Condition:

C	Crown
S	Stem
B	Basal area

Stems:

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



Appendix B



Tree Constraints Plan

02380 897933
info@chtstrees.co.uk
www.chtstrees.co.uk



Christopher Hoare Tree Services Ltd
Arboricultural Contracting & Consultancy
Limited Company No: 04768544 VAT Registration: 750117661

The Estate Office
Exbury Gardens
Summer Lane
Southampton
Hampshire
SO45 1AZ

39 Havant Road Tree Constraints Plan

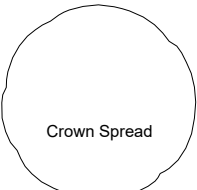
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Crown Spread



Root Protection Area



Category 'A'



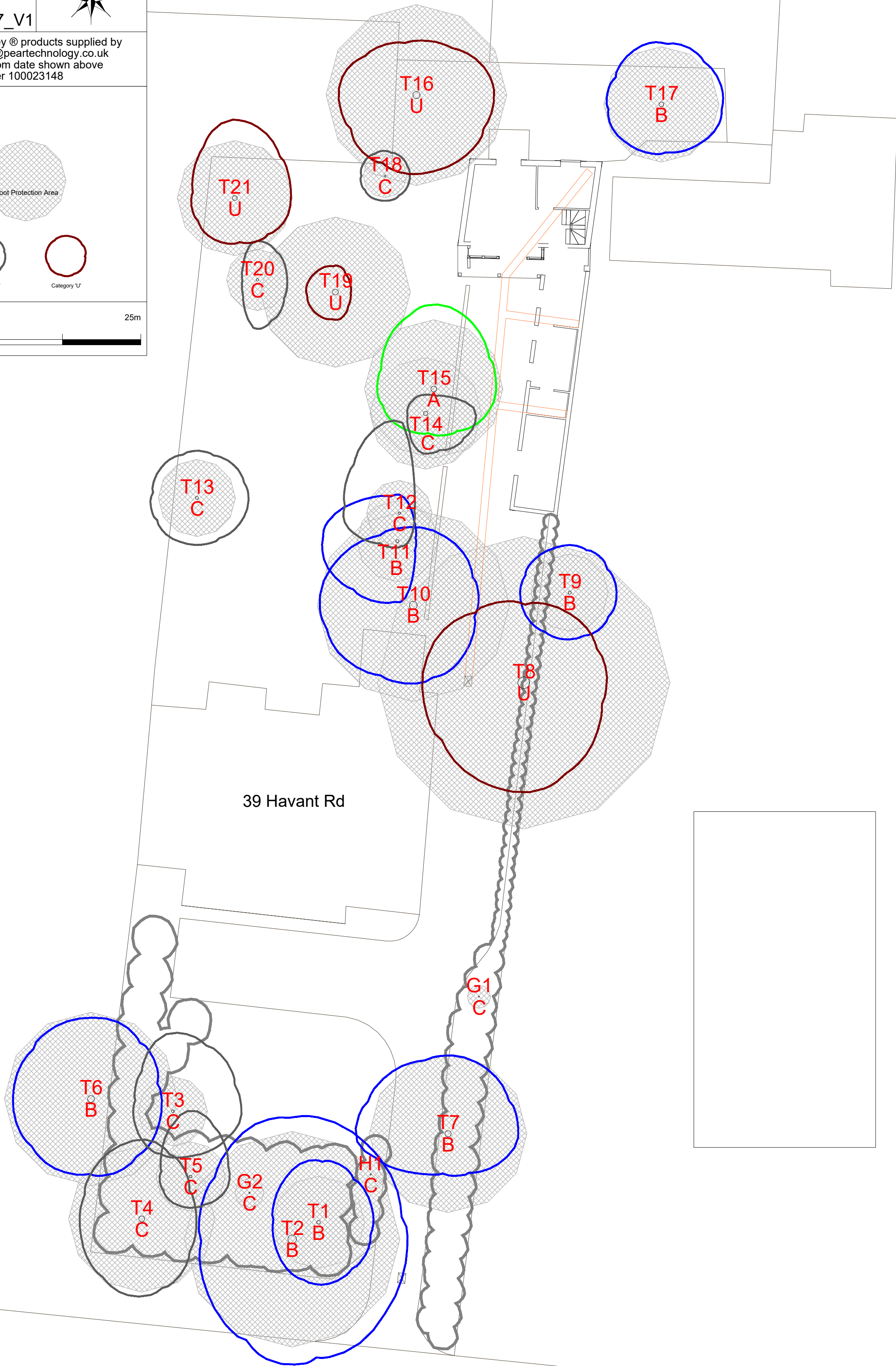
Category 'B'



Category 'C'



Category 'U'



Map Legend

- Category C Groups
- Category C Hedges
- Proposed Service Route



Tree Constraints Plan (Shading)

39 Havant Road Tree Constraints Plan (Shading)

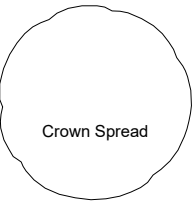
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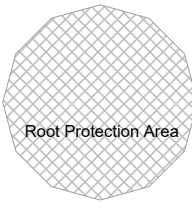


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Crown Spread



Root Protection Area



Shading Arc



Category 'A'



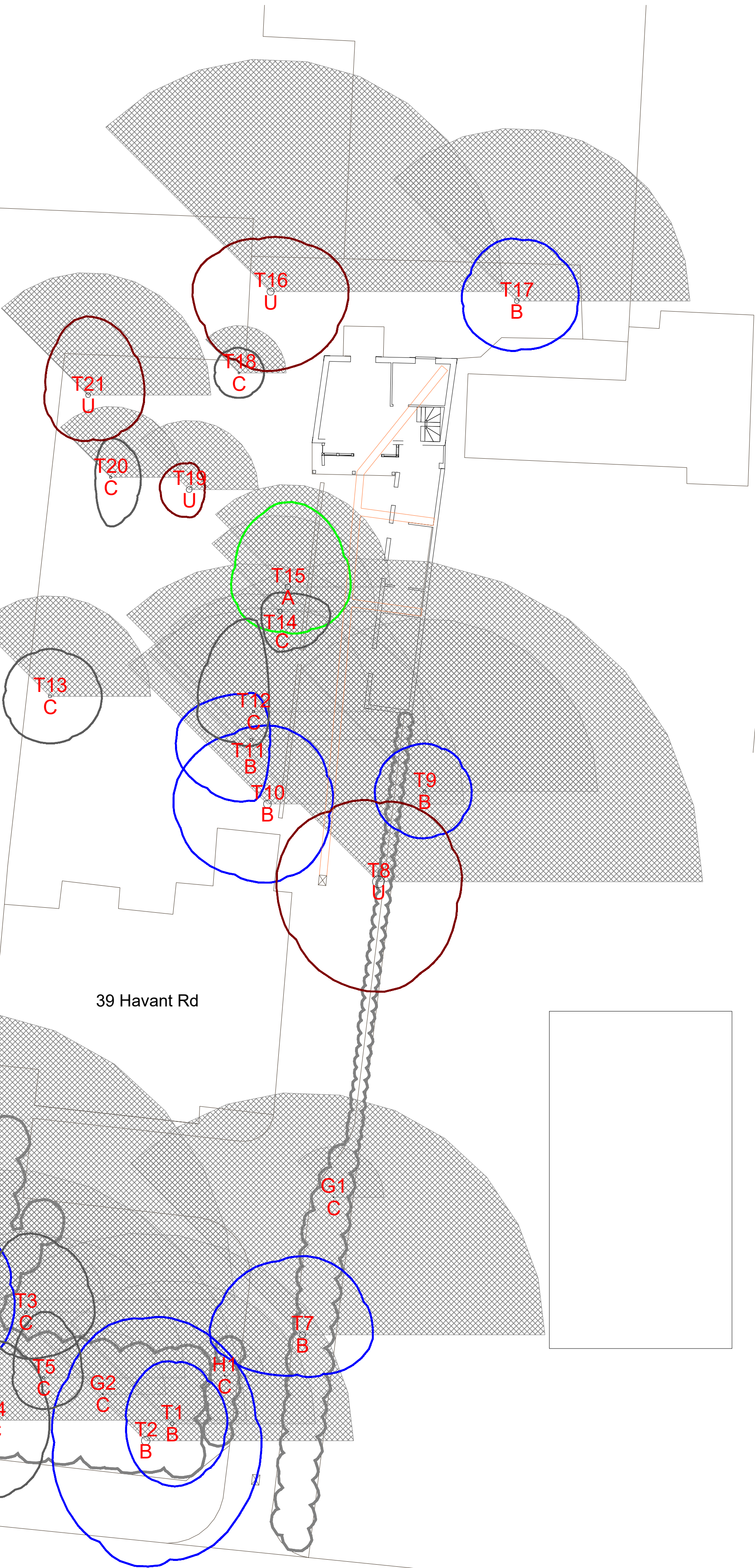
Category 'B'



Category 'C'



Category 'U'



Map Legend

- Category C Groups
- Category C Hedges
- Proposed Service Route



Tree Retention/Removal Plan

02380 897933
info@chtstrees.co.uk
www.chtstrees.co.uk



Christopher Hoare Tree Services Ltd
Arboricultural Contracting & Consultancy
Limited Company No: 04768544 VAT Registration: 750117661

The Estate Office
Ebury Gardens
Summer Lane
Southampton
Hampshire
SO45 1AZ

39 Havant Road Tree retention/Removal Plan

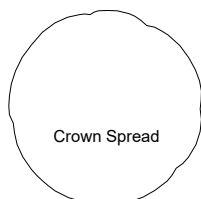
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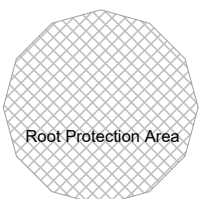


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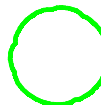
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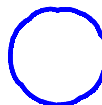
Crown Spread



Root Protection Area



Category 'A'



Category 'B'



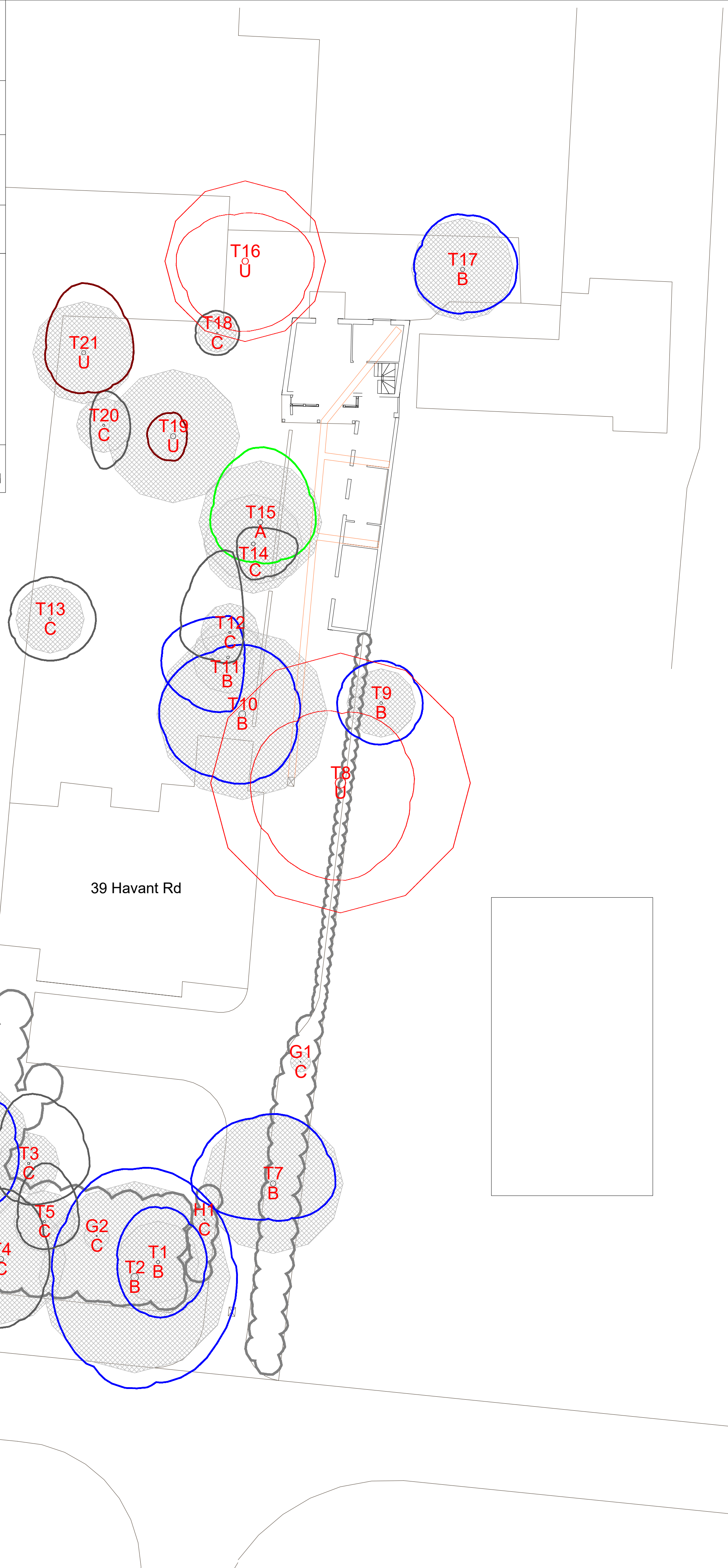
Category 'C'



Category 'U'

0

25m



Map Legend

- Category C Groups
- Category C Hedges
- Proposed Service Route
- Trees to be Removed



Tree Protection Plan

02380 897933
info@chtstrees.co.uk
www.chtstrees.co.uk



The Estate Office
Ebury Gardens
Summer Lane
Southampton
Hampshire
SO45 1AZ

39 Havant Road Tree Protection Plan

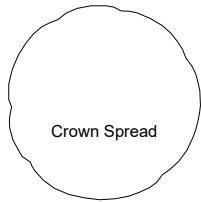
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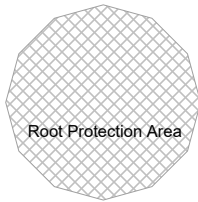


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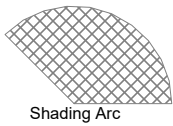
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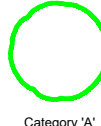
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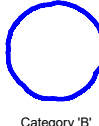
Root Protection Area



Shading Arc



Category 'A'



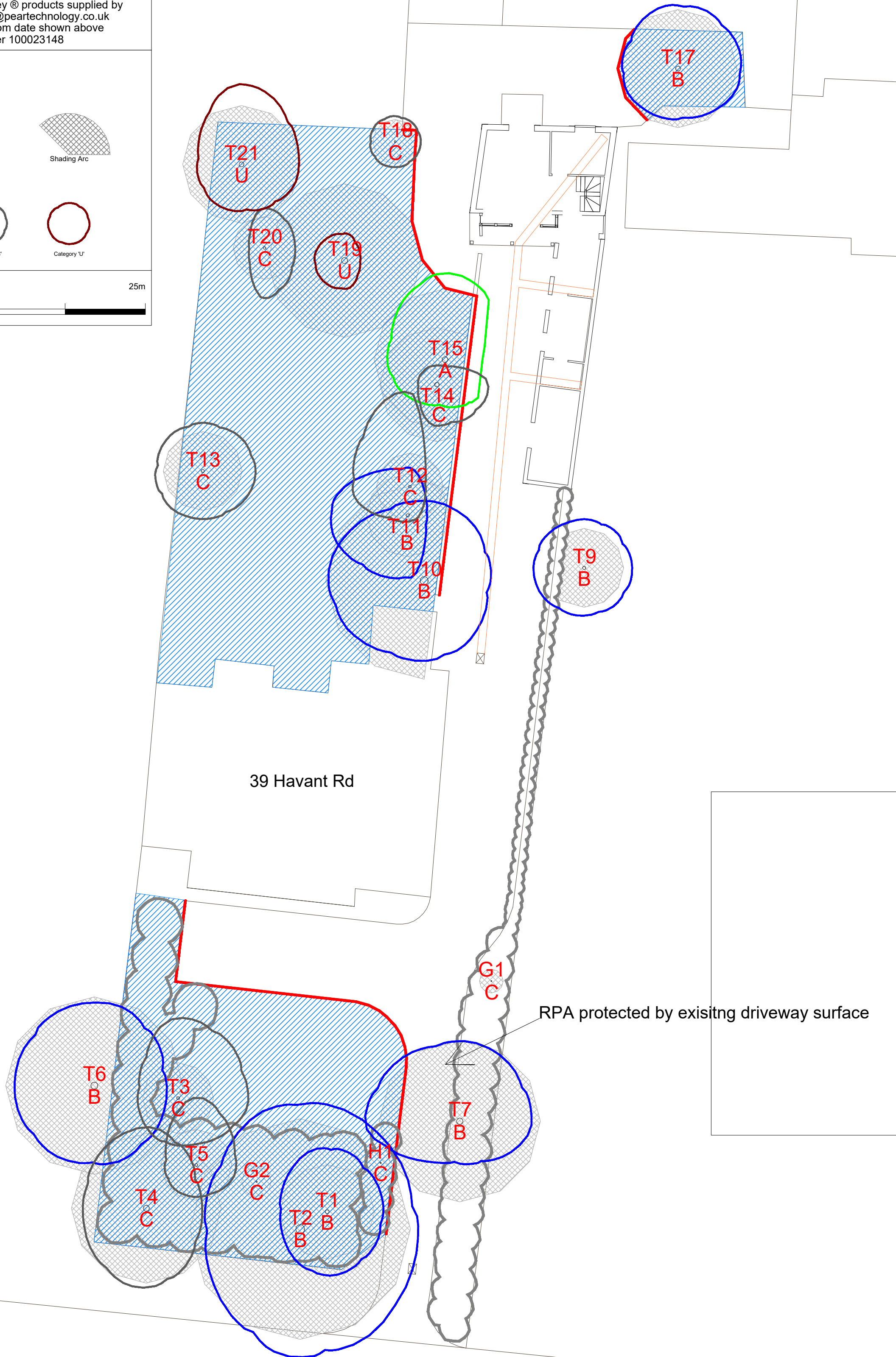
Category 'B'



Category 'C'



Category 'U'



Map Legend

- Construction Exclusion Zone
- Tree Protection Fence
- Category C Hedges
- Category C Groups
- Proposed Service Route



Appendix C



Figure 1

Tree Protective Fencing

Protective fencing should be erected before any construction commences on site. It should also be in a position to protect important trees prior to demolition.

Protective fencing should stay in position until all construction activity has finished.

'Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around retained trees. On all sites, special attention should be paid to ensuring that barriers remain rigid and complete.' BS 5837 para 9.2.1.

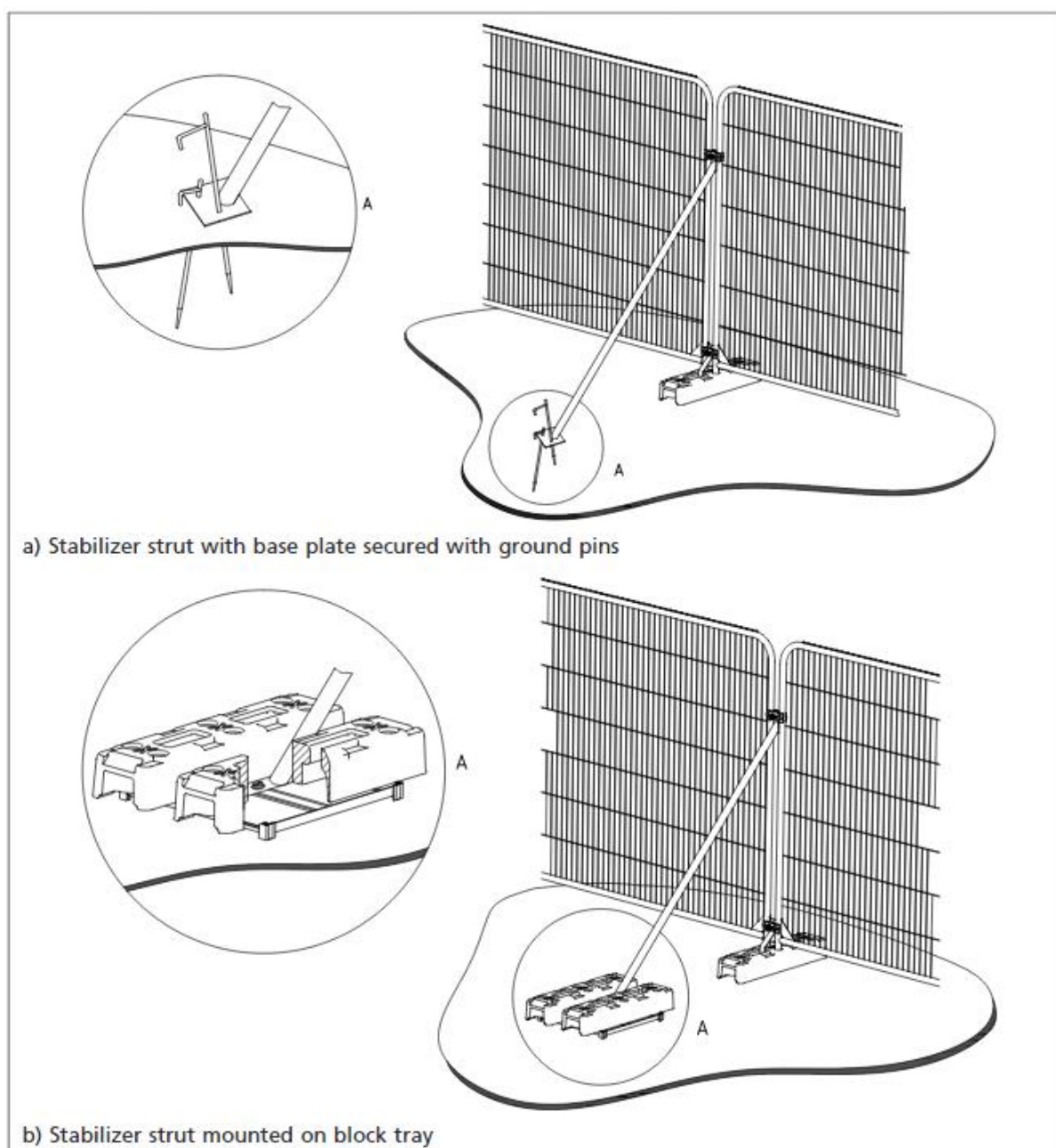




Figure 2

An example of all-weather warning signs to be affixed to fencing at appropriate intervals.

Construction Exclusion Zone

Keep Out!

The Following must be observed by all persons:

- **The protective fencing must not be moved**
- **No person shall enter the protected area**
- **No Machine or plant shall enter the protected area**
- **No Materials shall be stored in the protected area**
- **No spoil shall be deposited in the protected area**
- **No excavation shall occur in the protected area**

Any access into the protected area must be with the written permission of the local planning authority.

For further information please contact Christopher Hoare Tree Services Ltd (02380 897933)



Figure 3 Arboricultural Consultant Site Visit

Company:	Site:
Consultant:	Date:
Address:	Site Address:
Representative:	Site Representative
Phone:	Phone

Purpose:
Site meetings:
Observations:
Recommendations



Next site visit:



Appendix D



Figure 1





Figure 2





4. Qualifications

This report was constructed and written by

Oliver Lower Dip Arb L4 Senior Arboricultural Consultant

I have 15yrs experience in the Arboricultural industry and have attained the following accreditations.

National Diploma Arboriculture Lv3

Level 4 Diploma Arboriculture (ABC)

Professional Tree Inspection (LANTRA)



Bibliography

Strouts & Winter, R.G. & T.G., 1994. *Diagnosis of Ill Health in Trees*. 2nd ed. Standish: Arboricultural Association.

Standards publication, BSI, 2012. *Trees in relation to design, demolition and construction - Recommendations*. 1st ed. London: BSI.

Standards publication, BSI, 2010. *Tree work-Recommendations*. 1st ed. London: BSI.

Mattheck & Breloer, C & H, 1993. *The body language of trees*. 5th ed. Karlsruhe Research Centre: The Stationary Office.

British Standards Publication, BSi, 2012. *BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations*. 4th ed. London: BSI.

British Standards Publication, BSi, 2010. *Tree Work - Recommendations*. 3rd ed. London: BSi

Mattheck, C, 2007. *Updated Field Guide for Visual Tree Assessment*. 1st ed. Karlsruhe Research Centre: Forschungszentrum Karlsruhe GmbH

Weber, Mattheck, K,C, 2003. *Manual of Wood Decays in Trees*. 1st ed. Karlsruhe Research Centre: Forschungszentrum Karlsruhe GmbH.

Mattheck, Bethge, Weber, C,K,K, 2015. *The Body Language of Trees, Encyclopedia of Visual Tree Assessment*. 1st ed. Karlsruhe Research Centre: Forschungszentrum Karlsruhe GmbH.

National Joint Utilities Group "Guidelines for the planning, installation and maintenance of utility services in proximity to trees, 1995."