



Arboricultural Consultancy  
Holmwood Farm Grange Horsham Road North Holmwood Dorking Surrey RH5 4JR  
Tel: 01306 743374 Email: info@chaliceconsulting.co.uk Web: www.chaliceconsulting.co.uk

**Revision 3 of Tree Survey  
Arboricultural Impact Assessment  
Arboricultural Method Statement**

**Relating to:**

Hillcroft College, South Bank, Surbiton KT6 6DF

**Produced for:**

Richmond and Hillcroft Adult and Community College

**Prepared by:**

Chalice Consulting Ltd.  
Mr. David Chalice  
Dip. Arb. (RFS), F. Arbor. A, MICFor  
Chartered Arboriculturist

**Date:**

9<sup>th</sup> December 2021

**Our Ref:**

AR4849

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## APPENDICES

<b>Appendix 1</b> Tree Survey Schedule with Recommended Tree Works
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<b>Appendix 3</b> Example of Site Inspection Record
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## INTRODUCTION

### 1.0 Frequently Used Key Terms and Abbreviations

Tree Preservation Order	TPO
Arboricultural Method Statement	AMS
British Standard 5837:2012 – Recommendations for Trees in Relation to Design, Demolition and Construction	BS 5837
British Standard 3998:2010 - Recommendations for Tree Work	BS 3998
Root Protection Area/Root Protection Areas	RPA/RPAs
Local Planning Authority	LPA
Cellular Confinement System	CCS

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## **2.0 The Proposal**

- 2.1 The proposed is for the following:  
Demolition of Powell House; Construction of a replacement college building comprising two storeys and ancillary single storey building (Use Class F.1); Partial demolition, conversion and extension of the Listed Building 'Hillcroft College Including Former Stable Block' to provide 17 residential dwellings (Use Class C3); Construction of a new building in the setting of the Listed Building comprising two storeys and providing 4 residential dwellings (Use Class C3); Construction of an additional new building comprising four storeys and providing 13 residential dwellings (Use Class C3); with associated access, landscaping, drainage and other works.

## **3.0 Instructions and Purpose**

- 3.1 This report has been commissioned by Richmond and Hillcroft Adult and Community College to;
- Survey the trees in accordance with British Standard (BS 5837) 5837:2012 - Trees in Relation to Design, Demolition and Construction- Recommendations.
  - Make suggestions to decrease the arboricultural impact of the proposed scheme on the retained trees during the design process.
  - Incorporate the following design criteria suggestions from Mr. Ben Morgan (Tree Officer) following discussions on site on Tuesday 16<sup>th</sup> March 2021:
    1. No mechanical stump removal within the RPAs of the retained trees
    2. All root severance within the RPAs of the retained trees is to be supervised by a qualified Arboricultural Consultant
    3. All existing hard surfacing requiring removal within the RPAs of the retained trees will be removed using methodology to prevent damage to existing root systems
    4. Low invasive surfacing is to be used for incursions into the RPAs of the retained trees

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5. Crown lifting to permit vehicular access within the crown spread of Yew T40 is to be limited to 4m from ground level
6. Where boundary fencing is to be installed within the RPAs of the retained trees, the post holes will be lined with heavy duty polythene to prevent the harmful cement leaching into the soil and damaging the roots of the retained trees

- Detail the arboricultural impact of the proposed project.
- Prepare a tree work schedule to British Standard (BS 3998) 3998:2010 - Recommendations for Tree Work.
- Develop a tree protection strategy for the duration of the development including any demolition works.

3.2 Provision of the above information is designed to address the requirements of the LPA in terms of the arboricultural information necessary to register and determine the planning application.

#### **4.0 Scope**

4.1 In surveying the trees to the requirements of BS 5837, trees on and immediately adjacent to the site with a stem diameter over 75mm have been included. Large shrubs and hedges have been included where these are considered to be of significant amenity value. These are particularly important where they provide boundary screening. For clarity and ease of data interpretation, large shrubs have been classified as trees.

4.2 A full hazard assessment of the trees (including the assessment of decay or defects and their impact), has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have been identified in the Tree Survey Schedule and appropriate works recommended for immediate action.

4.3 It is the Client or their representative's responsibility to review the contents of this report to ensure it meets their requirements before it is sent to the LPA.

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## 5.0 Documents Supplied/Used

Document	Obtained From	Format/Ref.
Existing and proposed layout plans	Richmond and Hillcroft Adult and Community College	Dwg.
Topographical Survey	Richmond and Hillcroft Adult and Community College	Dwg.

## 6.0 Site Details

- 6.1 The site is comprised of part of the existing campus which slopes steeply down from the east to the west and from the north to the south.
- 6.2 The site is within the administrative jurisdiction of the Royal Borough of Kingston-upon-Thames.
- 6.3 I have not been instructed to ascertain the protection status of any of the trees on or near the site. However, I have been made aware by e-mail by the Client that a number of the surveyed trees are covered by a TPO and the subject site is in a Conservation Area. The TPO numbers are indicated on the Tree Survey Schedule at **Appendix 1**.

## TREE SURVEY

### 7.0 Survey Method

- 7.1 The site and trees were inspected on 25<sup>th</sup> April 2018 and the tree data was reviewed on 25<sup>th</sup> September 2019 and 9<sup>th</sup> December 2020.
- 7.2 The trees were inspected from ground level and no climbing inspections were undertaken.
- 7.3 Stem diameters were measured using a diameter tape at 1.5m from ground level unless stated in the Tree Survey Schedule at **Appendix 1**. The locations of the surveyed trees have originated from the drawings supplied by the Client unless otherwise stated in the Tree Survey Schedule.

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## 8.0 Tree Details

8.1 The total number of records is as follows:

Individual Trees (T): 42

Tree Groups (G): 14

8.2 The tree details and proposed works are presented in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1** and tree positions are shown on the Tree Protection Plan at **Appendix 2**.

8.3 The quality and value of the tree stock has been broken down by BS 5837 quality grade. The grading system can be summarised as follows:

**A Grade** – trees of high quality and value with a life expectancy of more than 40 years

**B Grade** – trees of moderate quality and value, with a life expectancy of more than 20 years

**C Grade** – trees of low quality and value, with a life expectancy of more than 10 years

**U Grade** – trees usually for removal (unless otherwise stated), with a life expectancy of less than 10 years

### Quality and Value of Existing Tree Stock

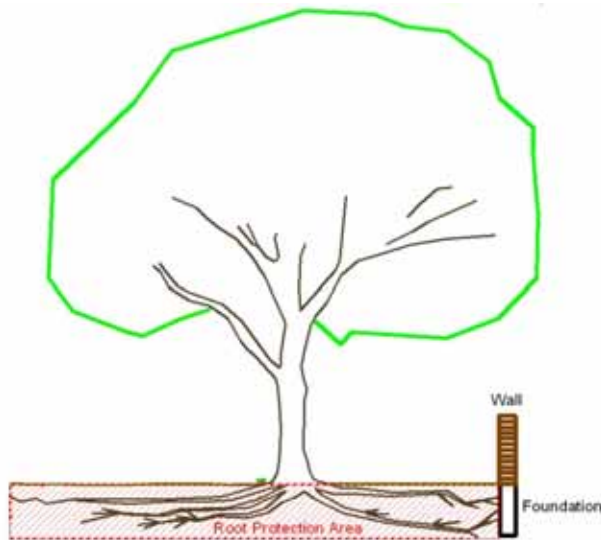
	A Grade	B Grade	C Grade	U Grade
<b>No. of Tree Records by Grade</b>	7	20	27	2

8.4 The RPAs of the trees are included in the Tree Survey Schedule with reference to Table 1 of BS 5837. The RPA is the area, measured in m<sup>2</sup>, which is calculated in accordance with the BS 5837 using the stem diameter of the trees. This should provide retained trees with sufficient rooting environment to survive the proposed development. Section 4.6.3 of BS 5837 provides for the shape of the RPA to be modified from the starting point of a circle to account for site features where rooting may be restricted, as long as the total area remains the same.

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### Diagrammatic Representation of a Restricted Root Protection Area



#### Modified RPAs

Tree No.	Impediments to Normal Rooting
T1, T24, T25, T26, T27, T28, T29, T32 and T33	Existing hard surfacing and buildings

## ARBORICULTURAL IMPACT ASSESSMENT

### 9.0 Introduction to Arboricultural Impact Assessment

9.1 This section comprises an assessment of the impact the proposed works detailed in Section 2 above have on trees. It considers the arboricultural impact and how this may be mitigated.

### 10.0 Tree Removal and Retention

10.1 The proposed scheme provides for the retention and protection of the following trees. These trees were chosen for their quality and suitability for retention within the context of the proposed development.

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**Trees to be Retained**

	A Grade	B Grade	C Grade	U Grade
<b>Tree No(s). To be Retained</b>	T9, T10, T15, T24, T27, T40 and T47	T12, T13, T14, part of G19, T21, T22, T23, T26, part of G35, T36, T37, T38, T42, T44, T45, T50, T51, G52, and T56	T1, part of G2, T3, G4, G6, T7, G8, T11, G16, T25, T28, part of G30, T32, T33, T39, G41, T43, T46, G53 and T54	0

- 10.2 The proposed scheme will require that the trees itemised in the Recommended Tree Works in **Appendix 1** and in the table below are removed. Such work will not impinge on the long-term character and appearance of the area subject to the implementation of a comprehensive landscaping scheme including tree planting, which is normally a standard condition of planning approval.

**Trees to be Removed**

	A Grade	B Grade	C Grade	U Grade (removal suggested irrespective of development)
<b>Tree No(s). To be Removed</b>	0	Part of G19, and part of G35	Part of G2, T5, T29, part of G30, G31, T34, G48, G49 and T55	T17 and T18
<b>Development Impact</b>	None	Low	Low	None

**11.0 Tree Pruning Works**

- 11.1 Tree pruning is recommended for good arboricultural practice and to ensure reasonable clearance from the proposed construction. The pruning described in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1** will not adversely affect the trees or their contribution to local amenity.

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## 12.0 Incursions into Root Protection Areas

12.1 The table below summarises the significant incursions into the RPAs of noteworthy, retained trees. The 'Action' column details how the incursion has been mitigated and why it is considered acceptable. Incursions may be fully invasive (where specialist methods are not used and some root loss is considered acceptable) or low invasive (where specialist methods are used to minimise damage to or loss of roots). Full details of how the works will be carried out without causing damage to the trees are given in the AMS.

### Summary of Incursions into RPAs

Tree No.	Type of Incursion	Impact	Action
T1, T15, T24, part of G30, T32, T33, part of G35, T36, T38, T40, G41 and T45	Low invasive surfacing	Moderate	A permeable low invasive surface will be installed under direct arboricultural supervision on top of the existing soil level to limit root disturbance to an acceptable level (see <b>Appendix 5</b> )
T15, T22 and T23	Fully invasive to adjust hard landscape layout	Low	All excavations within the RPAs of these trees will be carried out by hand under direct arboricultural supervision to limit root disturbance to an acceptable level (see <b>Appendix 5 Method 2</b> )

12.2 Existing buildings are also to be demolished adjacent to the RPAs of the retained trees. These works will be undertaken in an arboriculturally sensitive manner as detailed in the AMS.

12.3 No new underground services are to be installed within the RPAs of the retained trees.

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### 13.0 Proximity Issues and Shading

- 13.1 The approximate shade segments for key retained trees have been plotted using the arbEvolve software system, which identifies the approximate area of the site which may be affected by shade during the course of the day. The shade segment does not represent the area which will be in shade all day long; however, it represents an area which **may** be affected **at some point** during the course of a day.
- 13.2 The juxtaposition between retained trees and the proposed development is in accordance with Section 5.3 of the BS 5837 and should not lead to future pressure to heavily prune or remove retained trees for the following reasons:
1. Tree pruning has been recommended to provide adequate separation between the proposed development and the retained trees.
  2. Any future tree pruning works are unlikely to be over and above those generally accepted as good arboricultural practice in an urban environment.
  3. Low maintenance gutters can be specified to negate the need for removing leaves from the rainwater collection system.

### 14.0 Summary of Arboricultural Impact

- 14.1 In summary, the arboricultural impact of the proposed scheme is relatively minor as the trees to be removed as a result of the proposed development are located in the middle of a well treed site where tree removal will cause very little impact to the surrounding landscape.
- 14.2 During the landscaping phase of the development there is an opportunity to plant trees in the space outside the development footprint to mitigate for those recommended for removal. These areas have been safeguarded with tree protective fencing where possible to protect the planting medium in these areas.
- 14.3 The retained trees can be afforded an appropriate degree of protection in accordance with the BS 5837 as detailed in the AMS.

- 14.4 I have assessed the impact of the proposed development and it is considered to be in line with the recommendations set out in British Standard 5837.

## **ARBORICULTURAL METHOD STATEMENT**

### **15.0 Introduction to Arboricultural Method Statement**

- 15.1 To safeguard the retained trees (both above and below ground parts) during the development works and preserve the soil structure of areas which could be allocated for new planting, it will be necessary to implement tree protection measures as outlined below.
- 15.2 The basic principle is that the area inside the tree protective fencing and where ground protection has been used is to be protected for the duration of the works.
- 15.3 A copy of this AMS shall be maintained on site at all times and made available to all site personnel.
- 15.4 All site personnel shall be made aware of the key impact of this AMS and be given an arboricultural induction by the Site Manager. An Induction Form is attached at **Appendix 4**. A copy of the Induction Form will be signed by all site personnel to confirm that they have understood the issues involved.
- 15.5 As of 2005, Local Planning Authorities have powers to serve **Temporary Stop Notices** if agreed tree protection measures are not carried out. Adhering to this AMS will ensure that such costly and time consuming action is avoided.

### **16.0 Pre-Commencement Meeting**

- 16.1 A pre-commencement site meeting, involving representatives from the Development Company, the Arboricultural Consultant and the LPA Tree Officer will be held to ensure that all aspects of the tree protection process are understood and agreed. A record of the meeting will be communicated

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to all parties by the Arboricultural Consultant within five days of the meeting.

- 16.2 Attendance at a pre-commencement site meeting and for any site supervision (see Section 27.0) is chargeable at the standard hourly rate as stated in the terms and conditions attached to the quotation for this report.

## **17.0 General Site Precautions**

- 17.1 The following points will be observed at all times:
- No fires will be lit on site during the construction or demolition phases.
  - No access will be permitted inside the tree protective fencing.
  - No materials, equipment or debris will be stored within the tree protective fencing.
  - Notice boards, telephone cables or other services will not be attached to any parts of the retained trees.
  - Materials which will contaminate the soil (e.g. diesel oil and vehicle washings) will not be permitted to migrate into the RPAs of the retained trees.
  - A dedicated mixing and cleaning area will be set up to prevent concrete, cement and cleaning residue leaching into the RPAs of the retained trees (see Tree Protection Plan for specification).
  - Site cranes are to be automatically programmed to avoid loads striking the crowns, stems and branches of the retained trees.
  - Scaffolding will be erected outside the RPAs of the retained trees or on top of the ground protection if specified.
  - Site and lorry mounted cranes are to be automatically programmed (or a banksman will be present) to avoid loads striking the crowns, stems and branches of the retained trees.
  - All vehicle movements associated with the site (including skips) will be supervised by the on-site Arboricultural Liaison to ensure that the retained trees are not damaged during loading or unloading.
  - All cement/toxic materials are to be stored inside the site and not in the RPAs of any retained trees.

## 18.0 Tree Works

- 18.1 All tree works will be carried out in accordance with BS 3998:2010 'Recommendations for Tree Work' (as amended) and to current arboricultural best practice. Tree works will be carried out by a suitably qualified and experienced Arboricultural Contractor holding the necessary insurance cover. This contractor should carry out the relevant site specific risk assessments and record such information prior to commencement of tasks and work in accordance with current health and safety standards, practices and legislation. A list of such contractors is available from the Arboricultural Association at [www.trees.org.uk](http://www.trees.org.uk).
- 18.2 Submission of this AMS in connection with a planning application should be construed as a formal application to carry out those works to all trees including those protected by a TPO as specified in the Tree Survey Schedule with Recommended Tree Works at **Appendix 1**. It is recommended that this matter be clarified by the Client in writing with the LPA prior to any works commencing.
- 18.3 In addition, prior to the commencement of any tree works, an ecological assessment of specific trees may be required to ascertain whether protected species (e.g. nesting birds, bats, badgers and certain invertebrates) may be affected.
- 18.4 Tree ownership should be clarified in writing by the Client before any trees are removed or pruned.
- 18.5 If additional pruning of trees is required to facilitate the proposed works or access for machinery/plant, the Arboricultural Consultant will be contacted to advise on appropriate works and liaise with the LPA as necessary.
- 18.6 There is to be no stump removal within the RPAs of the retained trees. Tree stumps are to be cut to ground level and treated with Ecoplugs to prevent re-growth.

## 19.0 Tree Protective Fencing

- 19.1 Tree protective fencing is used to ensure that the RPAs of the retained trees are safeguarded. These measures may also be employed to protect areas of ground for new landscaping.
- 19.2 The positioning and specification of the fencing is shown in **Appendix 2**. In this case, the default specification of BS 5837 consisting of **fixed Heras** fencing would be effective.
- 19.3 The protective fencing will remain in position for the duration of the development, including the removal of any existing structures. Clear signs will be attached to the fencing once erected – suggested wording will be **‘Construction Exclusion Zone No Access’**.

## 20.0 Ground Protection

- 20.1 A provision has been made to install ground protection between the edge of the proposed development and the tree protective fencing. This provides adequate working space to permit the safe and practical completion of construction works whilst protecting the rooting environment of the retained trees. In this instance (and unless agreed otherwise by the Tree Officer) the proprietary trackway system for traffic over 2 tonnes will be the default specification (position and specification shown in **Appendix 2**). The ground protection will remain in place for the duration of the development, including the removal of any existing structures.
- 20.2 The area shown for low invasive surfacing should be covered by heavy duty ground protection. The final surface should be protected during the development with heavy duty (40mm thick) track mats to prevent damage and the need for re-laying if the surfacing is to be constructed after the extensions are constructed.

## 21.0 Site Access/Hard Surfaces

- 21.1 The construction of the driveway access road footpaths and parking bays within the RPAs of the retained trees will occur at the initial stage of development to ensure the RPAs of the retained trees are protected

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(position shown at **Appendix 2**). A CCS is to be used, the depth of which will be determined following consultation with a Structural Engineer or the supplier. Guidelines for installing low invasive hard surfaces within the RPAs of the retained trees are attached at **Appendix 5**. This will have an impact on final levels as the principle is to build up levels rather than carry out any excavation. The final surface should be protected during the development to prevent damage to the structure of the roots below and the need for re-laying. The tree protective fencing can be relocated under arboricultural supervision to enable this process. The final surface should be protected during the development with heavy duty (40mm thick) track mats to prevent damage and the need for re-laying.

- 21.2 The existing vehicle and pedestrian accesses into the site are suitable for ingress and egress during demolition and construction and no damage is anticipated to the root systems of the retained trees.

## **22.0 Demolition**

- 22.1 The existing buildings will be demolished using the 'top down, pull back' method as recommended in BS 5837. This is achieved by demolishing the structure into its own space with the placement of heavy machinery (if required) onto the existing foundation or ground protection. Existing hard surfacing and shed bases within the RPAs of the retained trees will be removed using the same procedure under direct arboricultural supervision to prevent the roots below the surfacing from being damaged.



**Example of demolition within the RPAs of retained trees (note that the machinery is located within the building footprint and the debris is contained by the tree protective fencing and the ground protection)**



### **23.0 Underground Services**

- 23.1 The proposed scheme can make use of several the existing services located inside and outside the site boundary. All new services and soakaways will be located in the adequate space outside the RPAs of the retained trees.
- 23.2 The locations, specifications and installation methods of all new services will be available for review at the pre-commencement site meeting before any works start on site.

### **24.0 Foundations**

- 24.1 There are no requirements for specialised foundations as the building footprints are located outside the RPAs of the retained trees.

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## **25.0 Hard Landscaping/Material Storage**

- 25.1 Hard landscaping is taken to include the construction of associated hard landscaping features such as retaining walls, patios, and cycle stores.
- 25.2 The storage of all materials required to complete the construction process will be located outside the RPAs of the retained trees and the line of the tree protective fencing.
- 25.3 Subject to all of the above tree protection measures being implemented, construction works may proceed without risk of damage to the retained trees.
- 25.4 All informal paths and steps within the RPAs of the retained trees are to be constructed using a pinned timber edge without the requirement for any excavations and then filled with woodchip.
- 25.5 All outdoor seating areas within the RPAs of the retained trees are to be free standing without the requirement for any hard surfacing.

## **26.0 Soft Landscaping/Boundary Fencing**

- 26.1 Soft landscaping will be undertaken when heavy machinery has been removed from site and tree protective fencing taken down. The following points will be observed:
- Care will be taken not to compact the soil within the RPAs of the retained trees or where new tree planting is to be carried out.
  - No changes in ground levels will occur within the RPAs of the retained trees.
  - Unwanted vegetation will be removed manually or using contact herbicides that will not damage existing tree roots.
  - No irrigation or drainage pipes will be installed within the RPAs of the retained trees.
  - If soil has been compacted in areas where planting is proposed, measures to improve soil structure (e.g. decompaction) may be necessary to facilitate successful plant establishment.

- Where fence and gate post holes are to be installed within the RPAs of the retained trees, they shall be lined with heavy duty polythene to prevent the harmful cement leaching into the soil and damaging the roots of the retained trees.

## **27.0 Sequencing/Supervision, Responsibility and Incident Reporting**

- 27.1 Effective tree protection relies on following a logical sequence of events and arboricultural inspection/supervision.
- 27.2 Works which have the potential to affect trees will be supervised by a suitably qualified and experienced Arboricultural Consultant. Regular inspection visits will also be undertaken to ensure that tree protection measures are being adhered to. The final details of supervision and the frequency of inspection visits will be agreed with the Tree Officer at the pre-commencement meeting. The Arboricultural Consultant will make a record of visits, which will be attached to the site copy of the AMS for inspection and communicated in writing to the LPA within five days of the site visit. An example of the Site Inspection Record is found in **Appendix 3**.
- 27.3 Daily inspection of the physical tree protection measures will be carried out by the on-site Arboricultural Liaison, who does not have to be a trained Arborist, but will be responsible for the implementation of the approved tree protection. Any deviation from the approved methodologies will need to be agreed by the Arboricultural Consultant who may need to visit site to authorise the revised tree protection measures. It is the responsibility of the Client or the Arboricultural Liaison to instruct the Arboricultural Consultant to attend site for the key events requiring supervision or monitoring. Any required modification to the tree protection measures or building techniques within the RPAs of the retained trees will be communicated in writing to both the appointed Arboricultural Consultant and the Tree Officer before the changes occur.
- 27.4 Any damage to stems, branches or any size roots of the retained trees will be reported immediately by email and telephone by the Arboricultural Liaison to the Arboricultural Consultant. The Arboricultural Liaison will take photographs of the damage and send these to the Arboricultural

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Consultant who will visit site to assess the scale of the damage and report to the LPA Tree Officer. Mitigation for the damage will be agreed with the LPA Tree Officer.

### Sequencing and Supervision

Stage	Action/Task	Personnel Responsible
1.	Issue arboricultural report to site manager	Client/Developer
2.	Give Arboricultural Consultant ( <b>AC</b> ) at least a week's notice of pre-commencement meeting	Client/Developer
3.	Arboricultural induction and appointment of the Arboricultural Liaison	Site Manager
4.	Carry out tree works (the Client is to establish tree ownership and protection status in writing before any tree works are carried out)	Site Manager
5.	Install all tree protective measures	AC to inspect
6.	Pre-commencement meeting	Site Manager, Tree Officer and AC
7.	Carry out demolition within the RPAs of the retained trees	AC to supervise
8.	Install base for low invasive hard surfacing within the RPAs of the retained trees or protect with ground protection	AC to supervise
9.	Hand dig to adjust hard landscape layout	AC to supervise
10.	Construct foundations	AC to supervise
11.	Install underground services	AC to supervise
12.	Erect scaffolding and carry out construction (including hard landscaping)	Site Manager
13.	Remove machinery/plant	Site Manager
14.	Remove all tree protective measures	Site Manager
15.	Carry out soft landscaping and erect boundary fencing	Site Manager to brief landscaping company on site and supervise

## 28.0 Amendments

28.1 Issues sometimes arise on development sites which require amendments to the previously agreed tree protection details. Any amendments to this AMS will be discussed with the Arboricultural Consultant and approved in

Challice Consulting Ltd.

Holmwood Farm Grange Horsham Road North Holmwood Dorking Surrey RH5 4JR  
Tel: 01306 743374 Email: info@challiceconsulting.co.uk Web: www.challiceconsulting.co.uk

writing by the LPA prior to being implemented. Copies of paperwork relating to any amendments shall be attached to the site copy of the AMS to provide a definitive record of what has been agreed.

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## **Appendix 1**

Site: Hillcroft College, South Bank, Surbiton KT6 6DF

Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T1	Common Oak 1 Number	16	6 5 10 8	GC2.5 FB 4 S	Mature	870 1	12	10.4	Poor	Fair	High	C	2,3	10+	TPO (Tree Preservation Order) number 1 Entire lower stem sounds hollow when tapped, not worthy of long term retention Major deadwood in canopy

**Recommended Works/  
Reason for Works:**

Crown reduce by approximately 3m to manage stem defects  
Remove all deadwood over 25mm in diameter  
To reduce risk of injury or damage  
To reduce risk of injury or damage

G2 approx	Mixed Species Group 25 Number	9	2 2 2 2	GC0.5 FB 1 N	Early Mature	120 1	12	1.4	Normal	Fair	Low	C	2,3	20+	Mix of Sycamore, Ash, Laurel and Holly Not all trees plotted on plan
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**Recommended Works/  
Reason for Works:**

Remove and replace part of group  
Recommended to permit development

T3	Sycamore 1 Number	15	7 6 5 4	GC 3 FB 5 W	Early Mature	440 1	12	5.3	Moderate	Fair	Medium	C	2	20+	TPO number 37 Ivy smothering stem prevented proper inspection or stem measurement
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**Recommended Works/  
Reason for Works:**

Remove Ivy up to 1.5m from ground level and re-inspect  
Advisable for good arboricultural practice

G4	Sycamore 3 Number	17	4 5 4 5	GC 2 FB 4 W	Early Mature	520 1	12	6.2	Normal	Fair	Medium	C	1,2	20+	Ivy smothering stems prevented proper inspection or stem measurements
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**Recommended Works/  
Reason for Works:**

Remove Ivy up to 1.5m from ground level and re-inspect  
Advisable for good arboricultural practice

**Notes:**

- Height describes the approximate height of the tree measured in meters from ground level.
- The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
- Ground Clearance (GC) is the height in meters of crown clearance above adjacent ground level, the height of the first significant branch (FB) and the direction in which it is growing.
- Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level. The stem diameter may be estimated (est) where access is restricted or an average (ave) taken for groups or multi-stemmed trees with more than five stems. The number of stems is also indicated.
- Protection Multiplier is the number used to calculate the tree's protection radius and area and is shown as 12.

- Protection Radius is a radial distance measured from the trunk centre.
- Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak) or Dead (dead or dying tree).
- Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
- Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
- Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
- Useful Life is the tree's estimated remaining contribution in years.

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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T5	Lawson Cypress	12	3	GC0.5 FB0.5 N	Mature	290	12	3.5	Normal	Fair	High	C	1,2	20+	TPO number 38 Two smaller trees 2m to the south
	1		2												
	Number		2												
			1												

**Recommended Works/** Remove and replace

**Reason for Works:** Recommended to permit development

G6	Sycamore Group	16	7	GC 5 FB2.5 N	Mature	360	12	4.3	Moderate	Fair	Medium	C	1,2	20+	Ivy smothering stems prevented proper inspection or stem measurements
	4		7												
	Number		7												
			6												

**Recommended Works/** Remove Ivy up to 1.5m from ground level and re-inspect

**Reason for Works:** Cut back to give 2m clearance from proposed building  
Advisable for good arboricultural practice  
Recommended to permit development

T7	Common Beech	17	8	GC 7 FB 6 E	Mature	940	12	11.3	Moderate	Fair	Medium	C	2,3	20+	Storm damage on stem at 6m on western side 2 scaffolds missing and likely decay in wound Tree growing on top of stone wall
	1		6												
	Number		8												
			4												

**Recommended Works/** No work proposed

**Reason for Works:**

G8	Mixed Group	14	2	GC 1 FB 1.5 E	Early Mature	180	12	2.2	Normal	Fair	Low	C	2,3	20+	Mixed group of Sycamore, Laurel and Holly Not all trees plotted on plan
	approx 30		2												
	Number		2												
			2												

**Recommended Works/** No work proposed

**Reason for Works:**

**Notes:**

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5. Protection Multiplier is the number used to calculate the tree's protection radius and area and is shown as 12.

6. Protection Radius is a radial distance measured from the trunk centre.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak) or Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
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12. Useful Life is the tree's estimated remaining contribution in years.



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Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T9	Copper Beech 1 Number	23	8 11 7 10	GC2.5 FB 4 S	Mature	960 1	12	11.5	Normal	Good	High	A	2	40+	TPO number 34 A tree with insignificant defects

**Recommended Works/** No work proposed

**Reason for Works:**

T10	Turkey Oak 1 Number	26	11 10 10 10	GC 4 FB 6 N	Mature	1120 1	12	13.4	Normal	Good	High	A	2	40+	Significant deadwood throughout crown
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**Recommended Works/** Remove all deadwood over 25mm in diameter

**Reason for Works:**

Advisable for good arboricultural practice

T11	Turkey Oak 1 Number	20	7 8 5 7	GC 8 FB 10 N	Mature	720 1	12	8.6	Moderate	Poor	Medium	C	2,3	10+	TPO number 32 Heavily decayed stem at 5m Ivy smothering stem prevented proper inspection or stem measurement
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**Recommended Works/** Remove Ivy up to 5m from ground level and re-inspect

**Reason for Works:**

Advisable for good arboricultural practice

T12	Yew 1 Number	8	4 4 3 3	GC 1 FB 3 S	Early Mature	380 1	12	4.6	Moderate	Good	Low	B	2,3	40+	TPO number 30 A tree with insignificant defects
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**Recommended Works/** No work proposed

**Reason for Works:**

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- Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
- Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
- Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
- Useful Life is the tree's estimated remaining contribution in years.

Site: Hillcroft College, South Bank, Surbiton KT6 6DF

Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>T13</b>	Yew 1 Number	11	5 3 5 5	GC 1 FB 0.5 E	Early Mature	370 1	12	4.4	Normal	Good	Medium	B	2,3	40+	TPO number 27 A tree with insignificant defects

**Recommended Works/** No work proposed

**Reason for Works:**

<b>T14</b>	Yew 1 Number	8	2 5 3 2	GC 1.5 FB 2 W	Early Mature	380 1	12	4.6	Normal	Fair	Low	B	2,3	40+	TPO number 29 A tree with insignificant defects
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**Recommended Works/** No work proposed

**Reason for Works:**

<b>T15</b>	Lime 1 Number	27	7 8 9 9	GC 1.5 FB 6 W	Mature	1800 1	12	15.0	Moderate	Fair	High	A	2	40+	TPO number 26 Significant deadwood throughout crown
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**Recommended Works/** Remove all deadwood over 25mm in diameter

**Reason for Works:**

Advisable for good arboricultural practice

<b>G16</b>	Mixed Group approx 15 Number	8	3 3 3 3	GC 4 FB 4 W	Early Mature	200 1	12	2.4	Normal	Fair	Low	C	2,3	40+	Ivy smothering stems prevented proper inspection or stem measurements Group of Sycamore, Laurel and Holly Not all trees plotted on plan
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**Recommended Works/** No work proposed

**Reason for Works:**

**Notes:**

1. Height describes the approximate height of the tree measured in meters from ground level.
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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T17	Sycamore 1 Number	12	3 3 3 3	GC 6 FB 3 W	Early Mature	340 1	12	4.1	Normal	Poor	Low	U			Heavy Squirrel damage to stem and upper canopy

**Recommended Works/** Remove and replace

**Reason for Works:** To reduce risk of injury or damage

T18	Sycamore 1 Number	14	4 4 6 4	GC 5 FB 5 S	Mature	490 1	12	5.9	Moderate	Poor	Medium	U		<10	Appearance of heavy decay around crown break at 5m
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**Recommended Works/** Remove and replace

**Reason for Works:** To reduce risk of injury or damage

G19	Mixed Group 9 Number	10	4 4 4 4	GC2.5 FB 2.5 E	Early Mature	280 1	12	3.4	Moderate	Fair	Medium	B	2,3	20+	Mixed species group of Sycamore, Holly, Oak and Yew with Laurel under-storey. Not all trees plotted on plan
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**Recommended Works/** Remove and replace part of group

**Reason for Works:** Recommended to permit development

T20	Sycamore 1 Number	18	5 5 7 5	GC 5 FB 5 W	Mature	530 1	12	6.4	Normal	Good	Medium	B	1,2	40+	Significant deadwood throughout crown, Ivy clad stem up to 15m
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**Recommended Works/** Remove and replace

**Reason for Works:** Recommended to permit development

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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T21	Holly 1 Number	10	4 5 6 4	GC2.5 FB 1 E	Mature	523 2	12	6.3	Normal	Fair	Medium	B	2,3	20+	A tree with insignificant defects

**Recommended Works/** No work proposed

**Reason for Works:**

T22	Yew 1 Number	10	7 6 5 5	GC0.5 FB 0.5 E	Mature	550 1	12	6.6	Normal	Fair	Low	B	2	40+	TPO number 3 A tree with insignificant defects
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**Recommended Works/** Cut back to give 2m clearance from building

**Reason for Works:**

Recommended to permit development

T23	Common Oak 1 Number	18	9 8 10 8	GC2.5 FB 2 S	Mature	400 1	12	4.8	Normal	Fair	Medium	B	2,3	20+	Significant deadwood throughout crown 3 stemmed tree
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**Recommended Works/** Cut back to give 2m clearance from proposed building Remove all deadwood over 25mm in diameter

**Reason for Works:**

Recommended to permit development To reduce risk of injury or damage

T24	Cedar of Lebanon 1 Number	23	7 8 10 10	GC0.5 FB 7 S	Mature	940 1	12	11.3	Normal	Good	High	A	2	40+	TPO number 6 A tree with insignificant defects
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**Recommended Works/** Cut back to give 2m clearance from proposed building

**Reason for Works:**

Recommended to permit development

**Notes:**

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T25	Common Oak 1 Number	15	8 8 4 8	GC 4 FB 5 S	Mature	780 1	12	9.4	Poor	Fair	Low	C	2,3	20+	Suppressed by T1, stressed appearance Significant deadwood throughout crown

**Recommended Works/Reason for Works:** Remove all deadwood over 25mm in diameter  
Advisable for good arboricultural practice

T26	Common Oak 1 Number	17	10 7 10 8	GC 4 FB 7 N	Mature	920 1	12	11.0	Moderate	Fair	High	B	2,3	40+	TPO number 5 Ivy smothering stem prevented proper inspection or stem measurement Significant deadwood throughout crown
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**Recommended Works/Reason for Works:** Remove Ivy up to 1.5m from ground level and re-inspect  
Remove all deadwood over 25mm in diameter  
Advisable for good arboricultural practice

T27	Yew 1 Number	11	5 5 5 5	GC0.5 FB 1 S	Mature	490 1	12	5.9	Normal	Good	High	A	2	40+	TPO number 4 A tree with insignificant defects
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**Recommended Works/Reason for Works:** No work proposed

T28	Common Oak 1 Number	14	8 7 2 5	GC 1 FB 3 S	Mature	830 1	12	10.0	Moderate	Fair	Medium	C	1,2	20+	Ivy smothering stem prevented proper inspection or stem measurement
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**Recommended Works/Reason for Works:** Remove Ivy up to 1.5m from ground level and re-inspect  
Advisable for good arboricultural practice

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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>T29</b>	Sycamore 1 Number	11	5 5 4 6	GC 3 FB 3 N	Mature	570 1	12	6.8	Moderate	Fair	High	C	2	20+	TPO number 1 Ivy smothering stem prevented proper inspection or stem measurement Significant deadwood throughout crown, tree displaying low vigour

**Recommended Works/** Remove and replace

**Reason for Works:** Advisable for good arboricultural practice

<b>G30</b>	Mixed Group 6 Number	17	4 4 4 4	GC1.5 FB 1.5 E	Early Mature	280 1	12	3.4	Normal	Fair	High	C	2,3	20+	Mixed group of Sycamore, Yew, Holm and Turkey Oak Ivy smothering stems prevented proper inspection or stem measurements
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**Recommended Works/** Remove and replace part of group      Remove Ivy up to 1.5m from ground level and re-inspect

**Reason for Works:** Recommended to permit development      Advisable for good arboricultural practice

<b>G31</b>	Mixed Group 10 Number	8	2 2 2 1	GC 1 FB 0.5 E	Young	110 1	12	1.3	Normal	Fair	Low	C	2,3	40+	Self sown trees in old tennis court - Laburnum and Sycamore
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**Recommended Works/** Remove and replace

**Reason for Works:** Recommended to permit development

<b>T32</b>	Sycamore 1 Number	15	7 5 6 5	GC 5 FB 6 E	Mature	660 1	12	7.9	Normal	Fair	Medium	C	1,2	20+	TPO number 7 Tree recently crown reduced
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**Recommended Works/** No work proposed

**Reason for Works:**

**Notes:**

- Height describes the approximate height of the tree measured in meters from ground level.
- The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
- Ground Clearance (GC) is the height in meters of crown clearance above adjacent ground level, the height of the first significant branch (FB) and the direction in which it is growing.
- Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level. The stem diameter may be estimated (est) where access is restricted or an average (ave) taken for groups or multi-stemmed trees with more than five stems. The number of stems is also indicated.
- Protection Multiplier is the number used to calculate the tree's protection radius and area and is shown as 12.

- Protection Radius is a radial distance measured from the trunk centre.
- Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak) or Dead (dead or dying tree).
- Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
- Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
- Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
- Useful Life is the tree's estimated remaining contribution in years.

Site: Hillcroft College, South Bank, Surbiton KT6 6DF

Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>T33</b>	Common Oak 1 Number	13	5 8 6 9	GC2.5 FB 5 S	Mature	940 1	12	11.3	Moderate	Poor	Medium	C	2	20+	TPO number 10 Ivy smothering stem prevented proper inspection or stem measurement  Large wound from failed scaffold at 4m on southeastern side Lower canopy mainly Epicormic growth
<b>Recommended Works/Reason for Works:</b>		Remove Ivy up to 4m from ground level and re-inspect  Advisable for good arboricultural practice													
<b>T34</b>	Common Oak 1 Number	10	7 7 3 8	GC1.5 FB 3 S	Mature	720 1	12	8.6	Normal	Poor	Medium	C	2	10+	Large wound on southeastern side of stem, likely decay in stem at this point Sounding hammer indicated a hollow stem
<b>Recommended Works/Reason for Works:</b>		Remove and replace Recommended to permit development													
<b>G35</b> approx 20	Sycamore Group Number	17	4 4 5 5	GC 4 FB 3 E	Mature	400 1	12	4.8	Normal	Fair	Medium	B	2,3	20+	Trees with insignificant defects Holly, Yew and Laurel as under-storey Not all trees plotted on plan
<b>Recommended Works/Reason for Works:</b>		Remove and replace part of group Recommended to permit development													
<b>T36</b>	Lawson Cypress 1 Number	14	2 2 2 2	GC2.5 FB 4 N	Mature	420 1	12	5.0	Normal	Fair	High	B	2	20+	TPO number 21 A tree with insignificant defects
<b>Recommended Works/Reason for Works:</b>		No work proposed													

**Notes:**

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- Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
- B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
- Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
- Useful Life is the tree's estimated remaining contribution in years.

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Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T37	Incense Cedar 1 Number	16	3 3 3	GC 8 FB 3 N	Mature	620 1	12	7.4	Normal	Fair	Medium	B	2	20+	3 stems from 3m, stem on southern side failed above that point in past

**Recommended Works/** No work proposed

**Reason for Works:**

T38	Corsican Pine 1 Number	16	7 7 8	GC 7 FB 7 N	Mature	780 1	12	9.4	Normal	Fair	Medium	B	2	20+	TPO number 14
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**Recommended Works/** No work proposed

**Reason for Works:**

T39	Holm Oak 1 Number	10	1 7 5	GC 1 FB 4 W	Early Mature	350 1	12	4.2	Moderate	Fair	Medium	C	1,2	40+	Heavily leaning to the west
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**Recommended Works/** Cut back to give 2m clearance from proposed building

**Reason for Works:**

Recommended to permit development

T40	Yew 1 Number	10	7 6 8	GC 1 FB 0.5 S	Mature	700 1	12	8.4	Normal	Good	Medium	A	2,3	40+	TPO number 9 A tree with insignificant defects
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**Recommended Works/** Crown lift to 2.5m over proposed footpath

**Reason for Works:**

Advisable for good arboricultural practice

**Notes:**

1. Height describes the approximate height of the tree measured in meters from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
3. Ground Clearance (GC) is the height in meters of crown clearance above adjacent ground level, the height of the first significant branch (FB) and the direction in which it is growing.
4. Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level. The stem diameter may be estimated (est) where access is restricted or an average (ave) taken for groups or multi-stemmed trees with more than five stems. The number of stems is also indicated.
5. Protection Multiplier is the number used to calculate the tree's protection radius and area and is shown as 12.

6. Protection Radius is a radial distance measured from the trunk centre.
7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak) or Dead (dead or dying tree).
8. Structural Condition - Good (no or only minor defects), Fair (remedial defects), Poor (major defects present).
9. Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).
10. B.S. Cat refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value; 'A' - High, 'B' - Moderate, 'C' - Low, 'U' - Remove.
11. Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.
12. Useful Life is the tree's estimated remaining contribution in years.



Site: Hillcroft College, South Bank, Surbiton KT6 6DF

Surveyor: Mr. James Burton, T. Cert. Arb.

Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>G41</b>	Sycamore Group 4 Number	17	7 7 7 7	GC2.5 FB 4 W	Mature	550 1	12	6.6	Moderate	Fair	Medium	C	2	20+	Some decay between stems of largest tree in group

**Recommended Works/Reason for Works:** Cut back to give 2m clearance from proposed building  
Recommended to permit development

<b>T42</b>	Sycamore 1 Number	20	6 5 6 5	GC 10 FB 7 E	Mature	650 1	12	7.8	Normal	Fair	High	B	2	20+	TPO number 13 A tree with insignificant defects
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**Recommended Works/Reason for Works:** Cut back to give 2m clearance from proposed building  
Recommended to permit development

<b>T43</b>	Sycamore 1 Number	12	4 4 5 6	GC2.5 FB 6 W	Mature	530 1	12	6.4	Normal	Poor	Medium	C	2,3	20+	Tree topped at 11m in past Ivy on stem
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**Recommended Works/Reason for Works:** No work proposed

<b>T44</b>	Common Ash 1 Number	22	8 6 8 6	GC 9 FB 8 W	Mature	510 1	12	6.1	Normal	Fair	High	B	2	20+	TPO number 14 A tree with insignificant defects
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**Recommended Works/Reason for Works:** No work proposed

**Notes:**

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- The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
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Site: Hillcroft College, South Bank, Surbiton KT6 6DF

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Date Surveyed: 25/04/2018 and Reviewed 25/09/2019 and 09/12/2020

Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
T45	Common Ash 1 Number	21	10 9 7 6	GC 2 FB 6 W	Mature	690 1	12	8.3	Normal	Fair	High	B	2	20+	TPO number 18 Ivy smothering stem prevented proper inspection or stem measurement Significant deadwood throughout crown

**Recommended Works/  
Reason for Works:**

Remove Ivy up to 1.5m from ground level and re-inspect  
Remove all deadwood over 25mm in diameter  
Cut back to give 2m clearance from proposed building  
Recommended to permit development  
Advisable for good arboricultural practice  
Recommended to permit development

T46	Common Ash 1 Number	18	2 4 5 8	GC 9 FB 9 W	Mature	420 1	12	5.0	Moderate	Fair	High	C	1,2	20+	Ivy smothering stem prevented proper inspection or stem measurement
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**Recommended Works/  
Reason for Works:**

Remove Ivy up to 1.5m from ground level and re-inspect  
Advisable for good arboricultural practice

T47	Corsican Pine 1 Number	21	6 8 7 6	GC 10 FB 12 W	Mature	770 1	12	9.2	Normal	Fair	High	A	2,3	40+	TPO number 17 Significant deadwood throughout crown
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**Recommended Works/  
Reason for Works:**

Remove all deadwood over 25mm in diameter  
Advisable for good arboricultural practice

G48 approx	Hornbeam Group 22 Number	10	1 2 2 1	GC 5 FB 2.5 W	Early Mature	170 1	12	2.0	Moderate	Fair	Low	C	2,3	40+	Lapsed hedge tunnel with G49 Not all trees plotted on plan
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**Recommended Works/  
Reason for Works:**

Remove and replace  
Recommended to permit development

**Notes:**

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Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>G49</b>	Yew Group	10	1	GC2.5	Early Mature	180	12	2.2	Normal	Fair	Low	C	2,3	40+	Eastern side of lapsed hedge tunnel with G48 Not all trees plotted on plan
approx 18	Number		1 1 1	FB 4 W		1									

**Recommended Works/** Remove and replace

**Reason for Works:** Recommended to permit development

<b>T50</b>	Yew	8	5	GC 1	Mature	370	12	4.4	Normal	Good	Low	B	2,3	40+	TPO number 28 A tree with insignificant defects
1	Number		6 5 3	FB 0.5 W		1									

**Recommended Works/** Cut back to give 2m clearance from proposed building

**Reason for Works:** Recommended to permit development

<b>T51</b>	Holly	9	4	GC 2	Mature	260	12	3.1	Normal	Good	Low	B	2,3	40+	TPO number 31 A tree with insignificant defects
1	Number		4 3 3	FB 4 S		1									

**Recommended Works/** No work proposed

**Reason for Works:**

<b>G52</b>	Sycamore	16	4	GC 5	Mature	370	12	4.4	Normal	Good	Low	B	2,3	20+	TPO numbers 15 and 16 Ivy smothering stems prevented proper inspection or stem measurements
2	Number		4 4 4	FB 6 N		1									

**Recommended Works/** Remove ivy up to 1.5m from ground level and re-inspect

**Reason for Works:** Advisable for good arboricultural practice

**Notes:**

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Our Ref: CC/1933 AR3653, AR4519 and AR4849

Tree No.	English Name	Height	Crown Spread	Ground Clearance	Age Class	Stem Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
<b>G53</b>	Mixed Group 8 Number	12	2 2 2 2	GC 1.5 FB 2 N	Early Mature	250 1	12	3.0	Normal	Fair	Low	C	2,3	40+	Trees with insignificant defects

**Recommended Works/** No work proposed

**Reason for Works:**

<b>T54</b>	Holly 1 Number	12	5 5 8 4	GC 3 FB 0.5 E	Mature	390 1	12	4.7	Normal	Fair	Low	C	1,2	40+	A tree with insignificant defects, previously part of G19
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**Recommended Works/** No work proposed

**Reason for Works:**

<b>T55</b>	Sycamore 1 Number	22	7 6 7 7	GC 3 FB 6 E	Mature	836 5	12	10.0	Moderate	Fair	High	C	1,2	20+	Heavily Ivy clad stems up to 14m Significant deadwood in tree's canopy Formerly part of G19
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**Recommended Works/** Remove and replace

**Reason for Works:** Recommended to permit development

<b>T56</b>	Lawson Cypress 1 Number	17	3 4 1 2	GC 0 FB 1 E	Mature	690 1	12	8.3	Normal	Fair	High	B	2	20+	A tree with insignificant defects, low layered branches to west T39 growing close to stem
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**Recommended Works/** No work proposed

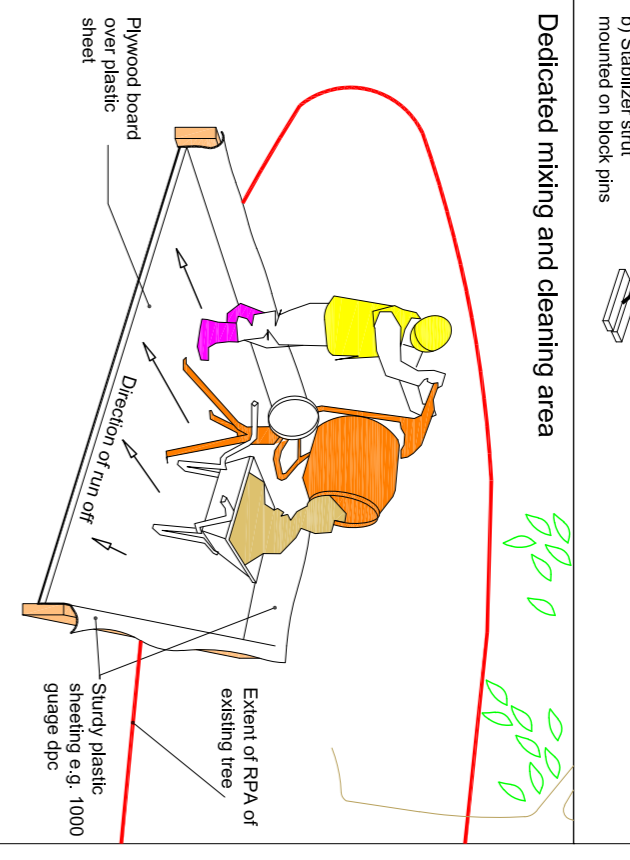
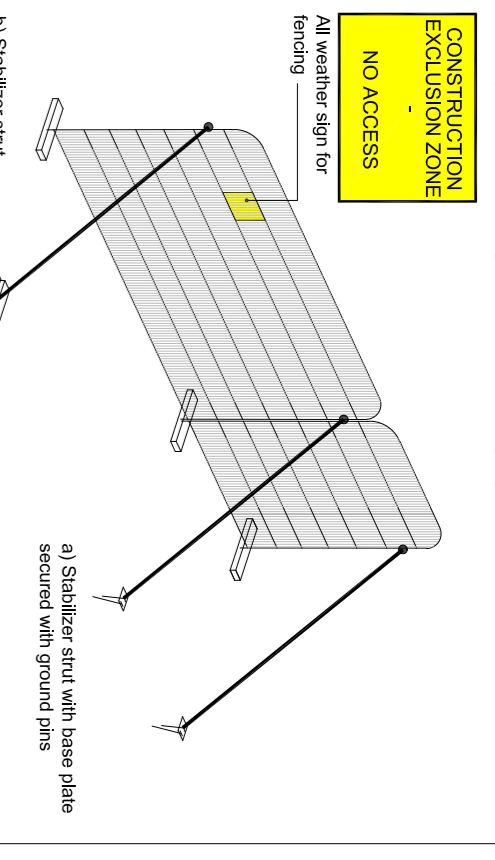
**Reason for Works:**

**Notes:**

1. Height describes the approximate height of the tree measured in meters from ground level.
2. The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
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## **Appendix 2**



**CONSTRUCTION**  
**NO ACCESS**

1) Stabilizer strut mounted on block plate

2) Stabilizer strut with base plate secured with ground pins

**Dedicated mixing and cleaning area**

**Ground Protection Detail**

Conduct machine operations under the supervision of a bankerman to ensure adequate space. Foundation pinning may be required.

Tree protection barrier

Proprietary tree-rieked ground protection

Proprietary tree-rieked ground protection

Existing wall level

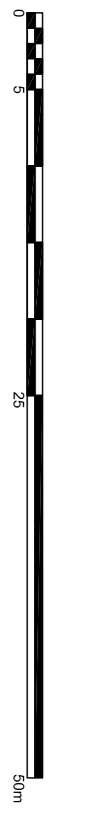
For wheeled or tracked construction traffic, greater than 2 tonnes, proprietary trackway boards may be used in place of proprietary tree-rieked ground protection boards

For wheeled or tracked construction traffic, greater than 2 tonnes, proprietary trackway boards may be used in place of proprietary tree-rieked ground protection boards

Low Invasive surface

Ground Protection

**THIS PLAN TO BE USED FOR SETTING OUT OF TREE PROTECTION MEASURES ONLY; DO NOT SCALE FROM THIS PLAN UNLESS IT IS PRINTED AT A1. DO NOT USE UNLESS PRINTED IN COLOUR**



**KEY:**

	Shade patterns for key
	BS rooting area is shown uniform but may be modified to account for site features
	BS rooting area has been modified to account for site features
	A Grade
	B Grade
	C Grade
	U Grade (remove)
	Tree to be removed
	Position of fixed Heras style fencing
	Position of ground protection
	Low Invasive surface
	Ground Protection

Challice Consulting Ltd.

**Notes:**

Tree protection barrier and ground protection to be erected and installed before machinery or materials are brought onto site, before any demolition or development of land and before soil stripping.

Tree protection measures should be implemented following any necessary pre-development tree work.

Where due to site constraints, construction activity cannot be fully or permanently excluded from all or part of a trees Root Protection Area, appropriate ground protection should be installed.

Barriers and ground protection must not be removed or altered except with prior recommendation by project arboriculturist and where necessary, approval from the Local Planning Authority.

Setting out to be confirmed by project arboriculturist prior to commencement of other operations.

The ground protection detail is to be used where the tree protection barrier needs to be set back so that it will expose unmade ground to construction activity. New, temporary ground protection should be installed as part of the physical tree protection measures prior to starting work on site.

Suitable existing hard surfacing not proposed for re-use as part of the finished design shall be retained as ground protection within root protection areas, where and as long as, it is possible.

Plan to be printed in colour and to scale

DATE: 13/01/2021

SCALE: 1:300 @ A1 09.12.2021

DC: 3

TPF-AR4949

**Tree Protection Plan**

PROJECT: Hillcroft College, South Bank, Surbiton KT6 6DF

CLIENT: Challice Consulting Ltd, Holmwood Farm Garage, Horsesham Road, North Holmwood, Dorling, Surrey RH45 4JR

Tel: 01306 743374

Email: info@challiceconsulting.co.uk

Web: www.challiceconsulting.co.uk

## **Appendix 3**

**Site:** Sample  
**Inspected By:** D. Challice  
**Client:** The Builder  
**Site Agent:** No staff present

**Date of Inspection:**   
**Time of Inspection:**

### Tree Protective Fencing

Tree protection in correct location

#### **Comments/Action**

No action at this time



Tree protection T23

### Agreed Construction Exclusion Zone

No debris within construction exclusion zone

#### **Comments/Action**

No action at this time



Tree protection T14

### Amendments to Documentation Required

No amendments required

#### **Comments/Action**

### Remedial Works

Install protection as per Arboricultural Method Statement

### General Comments

No ground protection in place for T11,12,14,17 & 22  
Sweet Gum T1 not removed



## Appendix 4

## Induction Form for all Site Personnel:

**Site Name:**.....

- I have had explained to me by the Site Manager the key implications of the Arboricultural Method Statement relating to the development at the above site.
  
- I am aware that the tree protective fencing must remain in its original position and must not be moved without the approval of the appointed Arboricultural Consultant.
  
- I understand that certain operations must be supervised by the appointed Arboricultural Consultant and that these operations must not start until the consultant is present and has given approval.
  
- I confirm that I will bring any concerns about potential damage to trees to the attention of the Site Manager.
  
- I am aware that I must not cause damage to any of the retained trees on or adjacent to the site. Damage may be caused by direct means (i.e. physical damage caused to roots or the trunk/branches of the tree) or by indirect means (e.g. by fire or toxic materials entering the rooting environment of the tree).

**Print Name:**.....

**Sign Name:**.....

**Date:**.....

## **Appendix 5**

## **Guidelines for Installing Low Invasive Surfaces**



Chalice Consulting Ltd.

Holmwood Farm Grange Horsham Road North Holmwood Dorking Surrey RH5 4JR  
Tel: 01306 743374 Email: [info@chaliceconsulting.co.uk](mailto:info@chaliceconsulting.co.uk) Web: [www.chaliceconsulting.co.uk](http://www.chaliceconsulting.co.uk)

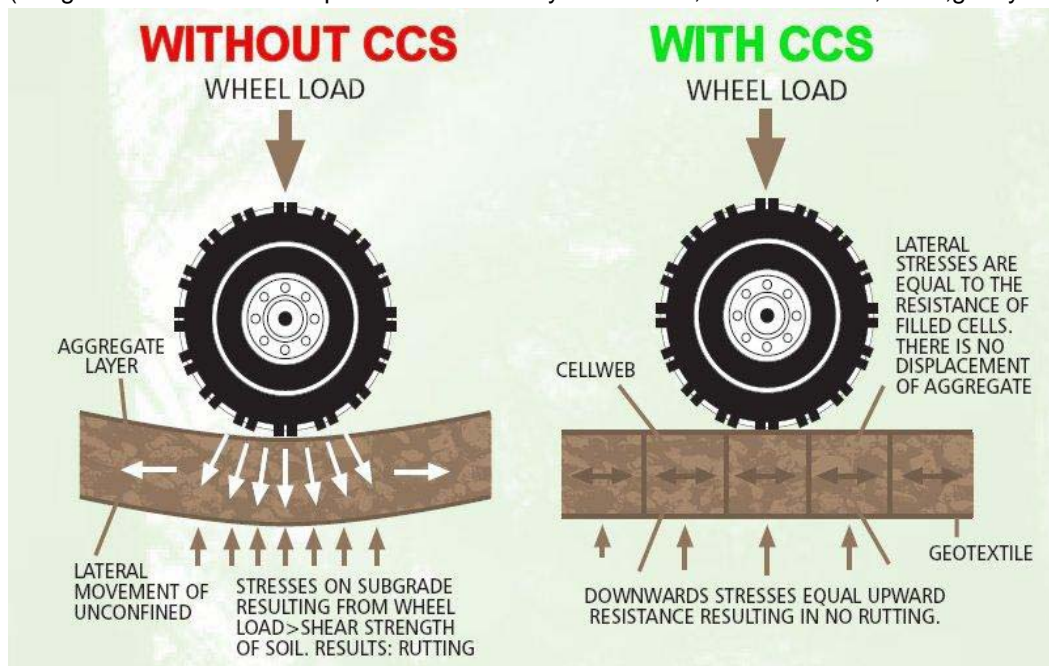
**Key Terms and Abbreviations:**

<b>Root Protection Area/Root Protection Areas</b>	<b>RPA/RPAs</b>
<b>Cellular Confinement System</b>	<b>CCS</b>
<b>British Standard (BS) 5837</b>	<b>BS</b>
<b>Arboricultural Method Statement</b>	<b>AMS</b>

- 1.0 Avoiding damage to tree roots, oxygen depletion and compaction of subsoil are important considerations when installing hard surfacing close to trees. An acceptable solution with minimal disturbance can be achieved with the use of a Geotextile membrane and the introduction of a CCS. This can be laid directly onto the existing soil level within the RPAs of retained trees. This low invasive CCS system prevents rutting and compaction of the subsoil.

**Illustration of Stress Distribution**

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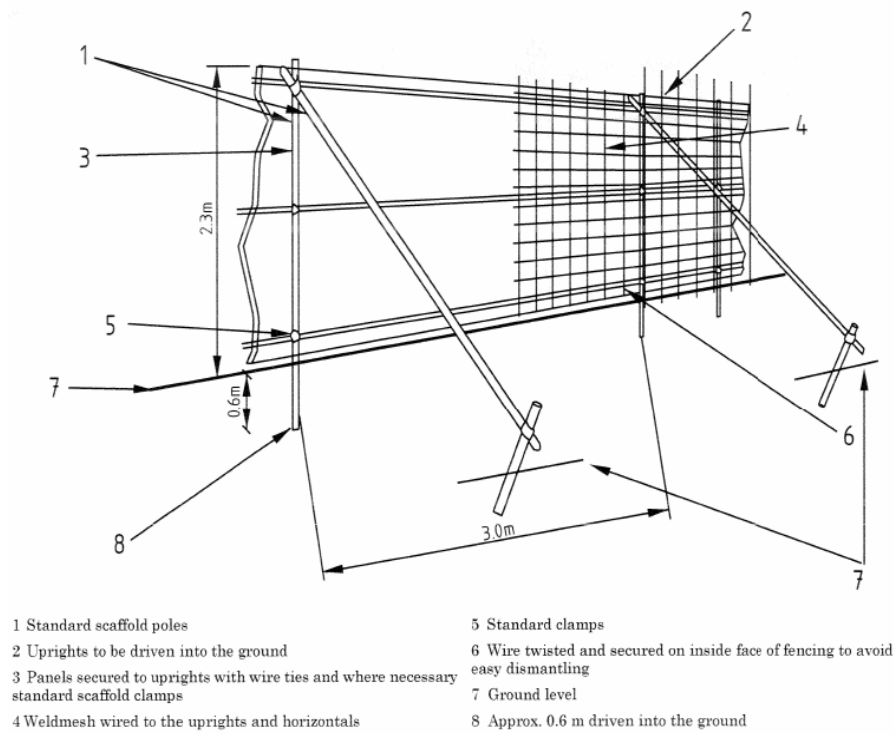


- 2.0 Retained trees must be protected first by the erection of fencing (see diagram below), then by the construction of surfaces in accordance with Sections 9 and 11 of the BS. **The tree protective fencing and surfaces within the RPAs of retained trees must be installed as per the sequencing recommended within the AMS. Hard surfaces constructed in this way can be used for construction access, storage and on-site parking and may need to be installed prior to demolition or construction.**

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**Tree Protective Fencing Detail** (alternative materials can be used, though all fencing is to be 'fit for purpose')



- 3.0 If ground levels are to be raised by more than 100mm within RPAs, this should be achieved by the use of a granular material which does not inhibit vertical gaseous diffusion. For example; no-fines gravel, washed aggregate, or cobbles.
- 4.0 Ideally, the CCS should be installed between May and October when the ground is driest and least prone to compaction. The approved wearing course is to be laid over the CCS. Where the new surface covers in excess of 20% of the RPA or is wider than 3m within the RPA, the new surface should be constructed in such a manner as to permit infiltration of moisture and gaseous diffusion. Government guidance now recommends permeable surfacing on most construction sites for drainage reasons and this should be considered for all hard surfacing within the RPA of retained trees.
- 5.0 The use of a non-woven Geotextile beneath the cellular mattress acts as a separation/filtration layer. The CCS should be filled with **no-fines** stone in the 20-40mm range. It is important that machinery is only used on the filled CCS and that it is not allowed to compact the soil within the RPAs of trees. Once filled, the perforated cellular wall structure provides mechanical interlock for infill materials, increasing the shear strength while allowing intercellular lateral free drainage.
- 6.0 The system is used as a permanent base for a wearing course and can also be used to provide a temporary site access. CCS material is available in thicknesses from 75mm to

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Tel: 01306 743374 Email: info@challiceconsulting.co.uk Web: www.challiceconsulting.co.uk

300mm. The exact thickness required on a site will depend on soil type and the anticipated use of the surface. **A Structural Engineer should design all engineering solutions to surfaces and Geosynthetics offer a free design service.**

- 7.0 The entire RPAs of trees are fenced off at the outset of the project. The fencing is then re-aligned when the works are to commence to facilitate construction of the hard surface.

## Stages for Installation of Low Invasive Surfaces

- Stage 1**      **Erect tree protective fencing to cover entire RPAs of retained trees.**
- Stage 2**      **Re-align tree protective fencing** just prior to work commencing to facilitate construction of low invasive surface. The tree protective fencing must then remain intact until all construction works are completed.
- Stage 3**      **Remove surface vegetation** by using a specific herbicide (as advised by a specialist) or manually remove using hand tools. Light machinery operating from beyond the RPA and tree canopy of retained trees could, under specialist supervision, be used to carefully remove existing wearing surfaces, (the sub base of existing surfaces or foundations should be left in situ where possible). If the existing soil level is to be lowered, material is to be cleared away manually. Roots over 25mm in diameter, which are found within the construction profile, should not be severed, but be left in situ and covered immediately with soil or sharp sand to prevent desiccation.
- Stage 4**      **Carry out final clearance under the canopies of retained trees.** This should be completed using hand forks (not spades) and any roots exposed should be cleanly cut and covered in soil/sharp sand immediately. Any delay to this process will require irrigation of any exposed roots and subsequent protection with dampened Hessian sacking or similar. Agreed removal of shrubs, saplings or trees, within the RPAs of retained trees should be cut to or just below ground level rather than pulled out, which can damage entwined roots.
- Stage 5**      **Level out the ground if necessary** using sharp sand or topsoil (or a mixture thereof). This fills out any hollows in the ground and ensures a smooth surface for laying out of the Geotextile membrane. It is important not to use any machinery within the RPAs of the trees that could compact the soil.

**Stage 6** Install the non-woven **Geotextile** directly over the soil surface and fix in place.



**Stage 7** Lay **CCS** out over the **Geotextile membrane** and ensure edges are anchored open during the infill process with steel staples or wooden pegs.



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**Stage 8** **Fill the CCS,** ensuring machinery works only on already filled areas and not the sub grade. Typical infill consists of no fines angular granular material of 20-40mm in diameter.



**Stage 9** **Install kerbs and edgings** directly on top of existing soil grade level. For light structures, a treated peg and board may be acceptable. For more substantial structures, railway sleepers, drilled kerbstones or gabions, held in place with track or road pins are more suitable. Edgings can be formed using bent reinforcing sheets if required (see diagram below).



**Stage 10** **Install permeable surface**

## Surfacing Options

### Block Paving

- Lay a second layer of Geotextile separation fabric over the infill CCS.
- Lay a sharp sand bedding layer compacted with a vibro-compaction plate to recommended depth.
- Place block paviors as per manufacturer's instructions.

### Loose Gravel

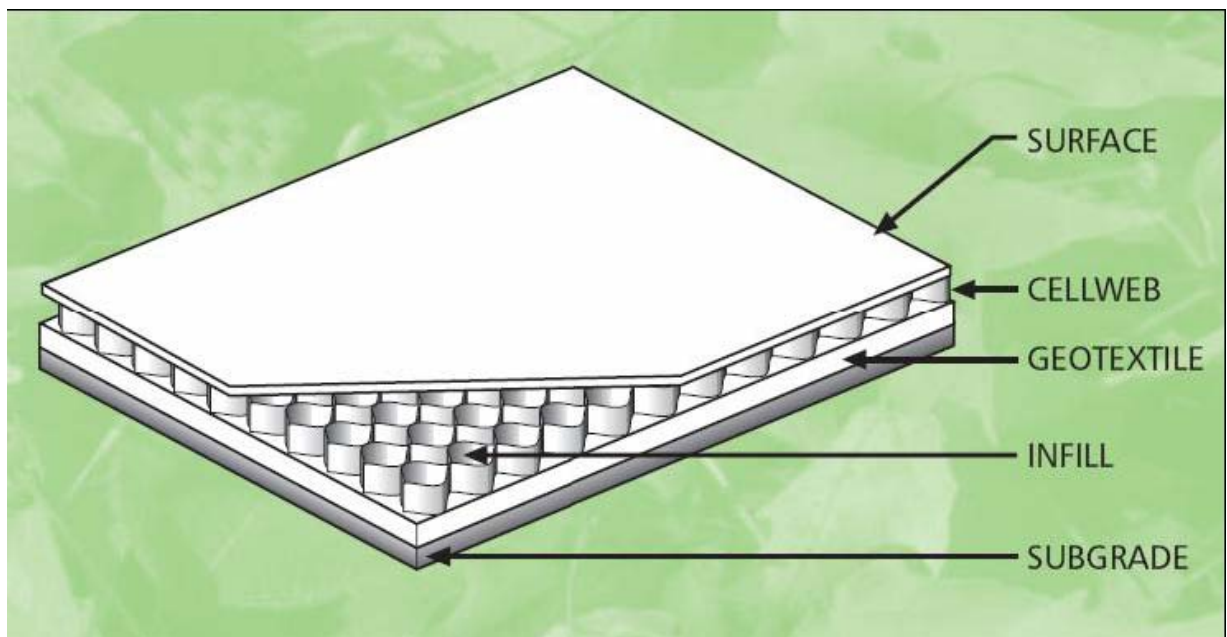
- Place second layer of Geotextile separation fabric over the infill CCS.
- Place pea shingle/ gravel to required depth.

### Permeable Tarmac

- Lay as per manufacturer's recommendations on top of CCS

### Makeup of Final Surface

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