



Arboricultural Consultancy
Holmwood Farm Grange Horsham Road North Holmwood Dorking Surrey RH5 4JR
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Tree Survey
Arboricultural Impact Assessment
Arboricultural Method Statement

Relating to:

27 Abbotswood, Guildford, Surrey GU1 1UY

Produced for:

Ms. Habiba Ahmed and Mr. Reubin Iqbal

Prepared by:

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

Date:

6th June 2023

Our Ref: AR5183

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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

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2.0 The Proposal

2.1 Planning permission has been granted for first floor front dormer windows and front, side and rear rooflights to provide additional rooms in the roof-space, removal of chimneys, fenestration alterations, replacement gates, garage, outbuilding and new car port.

3.0 Instructions and Purpose

3.1 This report has been commissioned by Ms. Habiba Ahmed and Mr. Reubin Iqbal 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.
- 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.
- Present the necessary arboricultural information to discharge Condition 2 of Planning Consent Ref. 22/P/02042 issued by Guildford Borough Council on 23/03/2023.

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.

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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.

5.0 Documents Supplied/Used

Document	Obtained From	Format/Ref.
Existing and proposed layout plans	KB Architecture	Dwg.

6.0 Site Details

- 6.1 The site is comprised of a residential dwelling with associated gardens and hard surfaces.
- 6.2 There are no significant inclines in any direction that would affect the recommendations in this report.
- 6.3 The site is within the administrative jurisdiction of Guildford Borough Council.
- 6.4 I have not been instructed to ascertain the protection status of any of the trees on or near the site.

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TREE SURVEY

7.0 Survey Method

- 7.1 The site and trees were inspected on 1st June 2023.
- 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.

8.0 Tree Details

- 8.1 The total number of records is as follows:
Individual Trees (T): 6
Tree Groups (G): 6
- 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
No. of Tree Records by Grade	3	4	4	1

- 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 m², 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.

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 all the trees surveyed with the exception of C grade G5, part of C grade G11 and U grade T12. Trees G5 and T12 are not a material planning constraint as they should be removed irrespective of the development proposals.

11.0 Tree Pruning Works

- 11.1 Minor 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	Incursion % Impact	Action
T1, T2 and G3	Fully invasive to install new brick piers for the new wrought iron gates	Low	All excavations within the RPAs of these trees will be carried out by hand to a depth of 1m under direct arboricultural supervision to limit root disturbance to an acceptable level (see Appendix 4 Method 2)
G3, T6, G8 and T10	Fully invasive to install slab foundations for the outbuilding, garage and car port	Low	All excavations within the RPAs of these trees will be carried out by hand to a depth of 1m under direct arboricultural supervision to limit root disturbance to an acceptable level (see Appendix 4 Method 1)

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 relevant 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 by shade depending on the time of day and season.
- 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.

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 of low/moderate quality where tree removal will cause very little impact to the surrounding landscape.
- 14.2 The retained trees can be afforded an appropriate degree of protection in accordance with the BS 5837 as detailed in the AMS.
- 14.3 I have assessed the impact of the proposed development and it is considered to be in accordance 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 5**. 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 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

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- 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.
- 18.2 The subject trees may be protected by virtue of being within a Conservation Area or covered by a TPO. Submission of this AMS in connection with a planning application should be construed as a formal application to carry out those works 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.
- 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.

21.0 Site Access/Hard Surfaces

- 21.1 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 existing services located inside and outside the site boundary and 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.
- 23.3 Any new servicers required for the new gates will be surface mounted to prevent excavations within the RPAs of trees Horse Chestnut T1 and Corsican Pine G3.

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24.0 Foundations

- 24.1 Due to the location of the proposed garage, car port and outbuilding within the RPAs of the retained trees, a 'raft or slab' type foundation will be designed by a qualified Structural Engineer, which will be placed on top of the existing soil level following the removal of the existing foundations.
- 24.2 A slab foundation is a large concrete floor covering the entire building area through which all the loads from the building are transmitted to the soil. It is both building floor and foundation and is well suited to garages, small stores, and homes without basements. The concrete floor and the foundation are cast in one piece. Steel bars are placed at the bottom under walls or columns to resist tensile stress in these zones. Light surface slabs can also be used to carry lightly loaded structures on soils subject to general earth movement. The soil surface should not be skimmed to accommodate the raft or slab; however, loose or organic matter and/or turf could be removed to form the new ground level using hand tools only.
- 24.3 A heavy duty plastic membrane will be placed on top of the soil to prevent contamination of the soil from the cement. A copy of the raft or slab design including elevations will be available for the pre-commencement site meeting for review by the Local Authority Tree Officer.
- 24.4 Any excavations required to level the ground within the RPAs of the retained trees will be carried out by hand under direct arboricultural supervision to limit root disturbance to an acceptable level (see **Appendix 4 Method 1**).

25.0 Hard Landscaping/Material Storage

- 25.1 There is no requirement for additional hard landscaping within the RPAs of the surveyed trees.
- 25.2 The storage of all materials required to complete the construction process will be located outside the RPAs of the surveyed 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 surveyed trees.

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.
- The two gate post to be installed within the RPAs of the retained trees will 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

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- 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 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 (AC) 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	AC, Tree Officer, Client and Site Manager
7.	Carry out demolition within the RPAs of the retained trees	AC to supervise
8.	Construct the slab foundations for the buildings and hand dig the gate post holes	AC to supervise
9.	Install underground services	AC to supervise
10.	Erect scaffolding and carry out construction (including hard landscaping)	Site Manager
11.	Remove machinery/plant	Site Manager
12.	Remove all tree protective measures	Site Manager
13.	Carry out soft landscaping	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 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

Tree Survey Schedule with Recommended Tree Works



Site: 27 Abbotswood, Guildford, Surrey GU1 1UY
Date Surveyed: 01/06/2023

Surveyor: Mr. David Challice
Job Number: AR 5183

Tree No.	English Name	Height	Radial Crown Spread	Ground Clearance	Life Stage	Stem Diameter	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	BS Cat	Useful Life	Observations	Reason/Works/Priority
T1	Horse Chestnut	16m	N4m E7m S5m W4m	2m 3m W	Mature	670mm	8.0m	Good	Good	High	B (2)	20+	Tree with insignificant defects; tree located off site in the street.	No works proposed.
T2	Horse Chestnut	16m	N5m E5m S4m W4m	2m 4m N	Mature	620mm	7.4m	Good	Good	High	B (2)	20+	Tree with insignificant defects; tree located off site in the street.	No works proposed.
G3	Corsican Pine	27m	7m	9m 9m N	Mature	820mm ave	9.8m	Good	Good	High	A (2)	40+	Ivy smothering stems prevented inspection and stem measurements.	Safety: Remove Ivy up to 1m from ground level and re-inspect. 3 Months.
G4	Leyland Cypress	2m	0.5m	0m 0m N	Early Mature	100mm ave	1.2m	Good	Good	Low	C (2)	20+	Regularly trimmed hedge.	No works proposed.
G5	Ash and Common Laburnum	15m	N3m E4m S4m W6m	2m 2m N	Early Mature	200mm ave	2.4m	Fair	Fair	Low	C (2)	10+	Poor quality trees growing too close to the building.	Facilitative: Remove and replace. 3 Months.
T6	Horse Chestnut	18m	N7m E5m S6m W7m	3m 2m S	Mature	920mm	11.0m	Good	Good	High	A (2)	40+	Tree with insignificant defects.	No works proposed.
T7	Apple	5m	N1m E3m S4m W2m	2m 1m N	Mature	360mm	4.3m	Good	Good	Moderate	C (2)	20+	Tree with insignificant defects.	No works proposed.
G8	Mixed Species	18m	6m	2m 3m N	Mature	600mm ave	7.2m	Good	Good	High	B (2)	20+	Ivy smothering stems prevented inspection and stem measurements.	Safety: Remove Ivy up to 1m from ground level and re-inspect. 3 Months.
G9	Mixed Species	16m	4m	2m 2m N	Early Mature	400mm ave	4.8m	Fair	Fair	Moderate	B (2)	40+	Ivy smothering stems prevented inspection and stem measurements.	Safety: Remove Ivy up to 1m from ground level and re-inspect. 3 Months.

Tree Survey Schedule with Recommended Tree Works



Site: 27 Abbotswood, Guildford, Surrey GU1 1UY
Date Surveyed: 01/06/2023

Surveyor: Mr. David Challice
Job Number: AR 5183

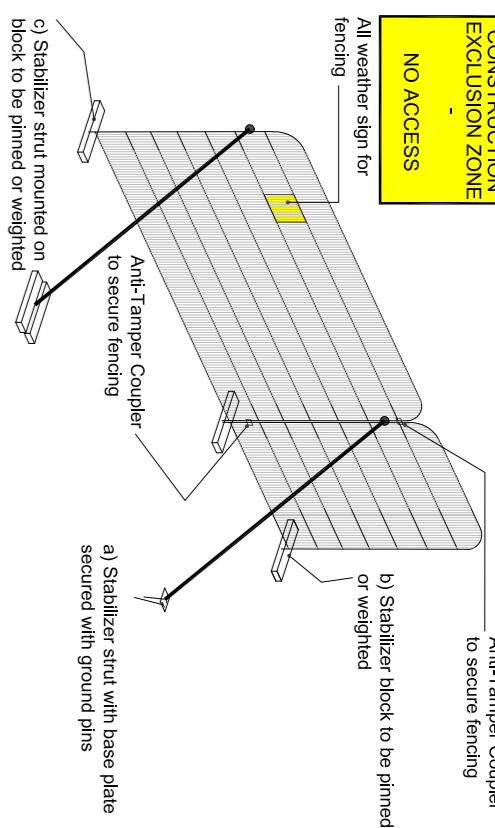
Tree No.	English Name	Height	Radial Crown Spread	Ground Clearance	Life Stage	Stem Diameter	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	BS Cat	Useful Life	Observations	Reason/Works/Priority
T10	Deodar Cedar	5m	3m	2m 4m N	Early Mature	700mm	8.4m	Good	Good	High	A (2)	40+	Ivy smothering stem prevented inspection and stem measurement.	Safety: Remove Ivy up to 1m from ground level and re-inspect. 3 Months.
G11	Mixed Species	5m	3m	0m 0m N	Early Mature	100mm ave	1.2m	Good	Good	Low	C (2)	20+	Part of group is located off site.	Development: Remove and replace part of group only. Cut back growth to boundary line only. Before development commences.
T12	Sycamore	16m	3m	1m 1m N	Early Mature	300mm est	3.6m	Poor	Poor	Low	U	<10	Significant deadwood over 25mm in diameter; Ivy smothering stem prevented inspection and stem measurement.	Safety: Remove and replace. Before development commences.

Key for the Tree Survey Schedule with Recommended Tree Works

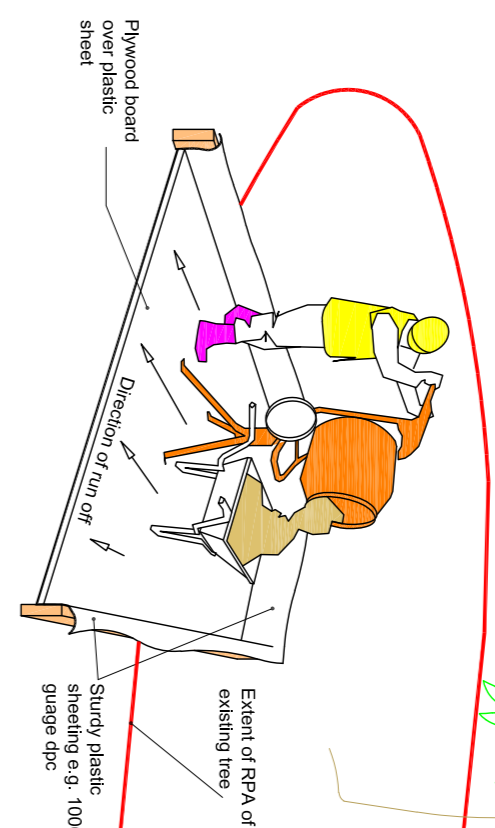


- **Tree No.** refers to the tree reference number and the prefix of **T** - Single tree, **G** - Tree group, **H** - Hedge or **W** - Woodland.
- **English Name** refers to the tree's common name.
- **Height** describes the approximate height of the tree measured in meters from ground level.
- **Radial Crown Spread** refers to the crown radius in meters from the stem centre and can be labelled as the four compass points of N, E, S, W.
- **Ground Clearance** the first measurement refers to the lowest point of the crown height in meters above ground level, the second measurement is the height of the first significant branch and the cardinal point to which it is growing.
- **Stem Diameter** is the diameter of the stem measured in millimeters at 1.5m from ground level unless otherwise stated. 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 Radius** is a radial distance measured in meters from the trunk centre.
- **Growth Vitality** - **Good** , **Fair** (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) or **Hazardous** (defects require immediate remedial tree works).
- **Landscape Contribution** - **High** (prominent landscape feature), **Moderate** (visible in landscape) or **Low** (secluded/among other trees or obscured by structures).
- **BS Cat** refers to British Standard 5837:2012 Table 1 and refers to tree/group quality and value. **A** - High, **B** - Moderate, **C** - Low or **U** - Remove if within site ownership or control. The sub-category is in the line below the BS Cat in parentheses and refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and/or Commemorative.
- **Useful Life** is the tree's estimated remaining contribution in years.
- **Observations** provide additional information where it is necessary.
- **Reason/Works/Priority** details the reason why the tree works have been specified and the time scale (from the survey date) that the works should be completed.

Appendix 2



1) Stabiliser strut mounted on Anti-Tamper Coupler to secure fencing
2) Stabiliser back to be pinned or weighted
3) Stabiliser strut with shoring plate secured with ground pins



Ground Protection Detail
Conduct machine operations under the supervision of a competent person to ensure adequate safety. Installation personnel may be required.
Tree protection barrier
Ground Protection for pedestrian operated plant
Proprietary tree-thick ground protection
Tobacco or woodchip or other compression resistant layer over Gleditsia membrane
Existing soil level

For pedestrian access only, compression resistant layer may be reduced to 100mm greater than 2 tonnes, proprietary strapping boards may be used in place of proprietary three-thick ground protection boards

KEY:

	Shade patterns for key relevant trees
	BS routing area is shown uniform but may be modified to account for site features
	ES routing area has been modified to account for site features
	A Grade
	B Grade
	C Grade
	U Grade
	Tree to be removed
	Position of fixed barrier fencing
	Position of ground protection annotation

Challice Consulting Ltd. annotation

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 arboriculturists and where necessary, approval from the Local Planning Authority.
Selling out to be confirmed by project arboriculturists 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.

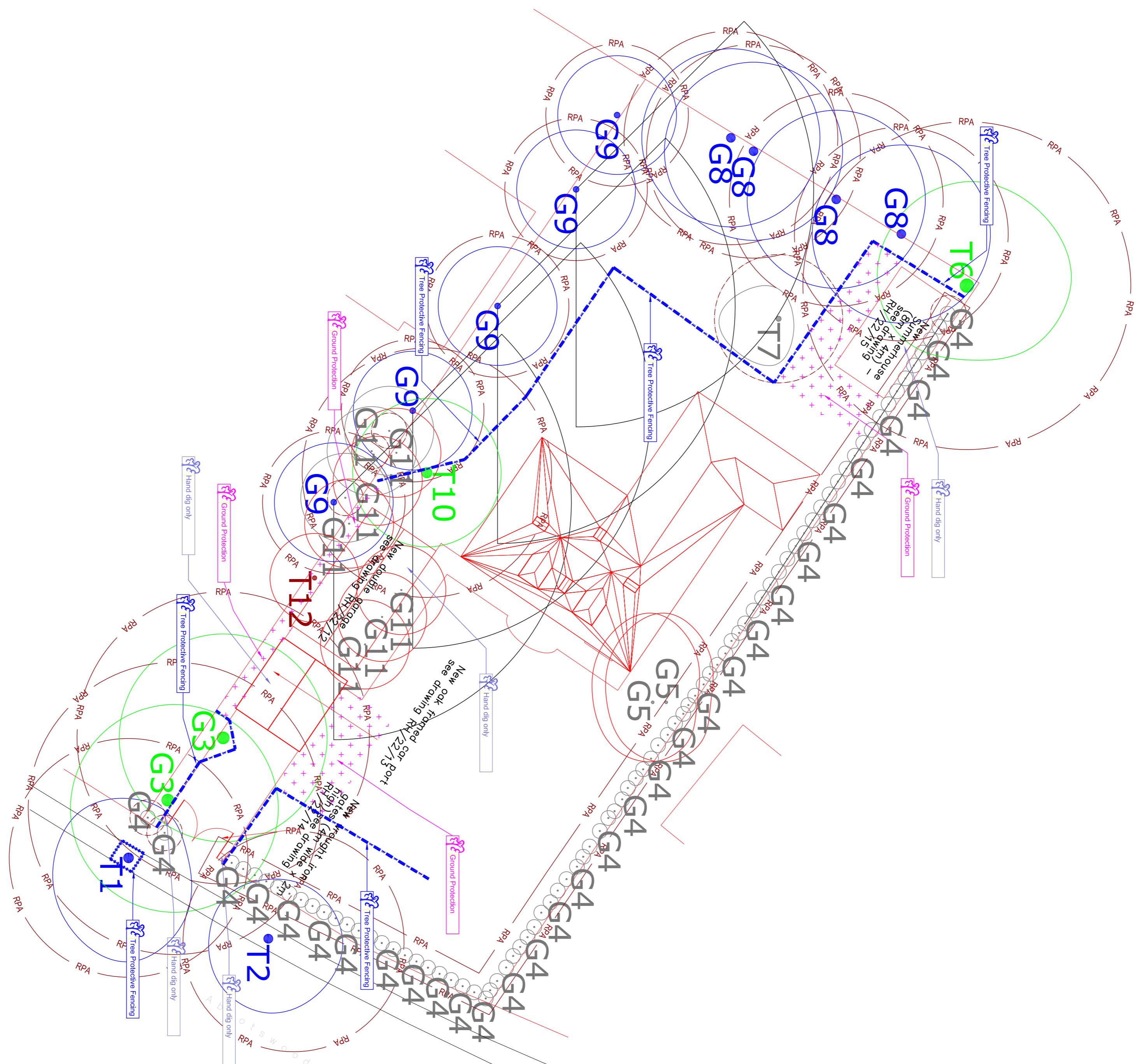
Plan to be printed in colour and to scale

Overall Tree Protection Plan

27 Abbotswood, Guildford, Surrey GU1 1UY

SCALE: A1 @ 1:200
DATE: 06.06.2023
DRAWN BY: D.C.
CHECKED BY: R

Challice Consulting Ltd.
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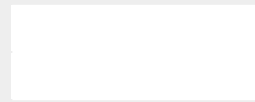


THIS PLAN TO BE USED FOR SETTING OUT OF TREE PROTECTION MEASURES ONLY; DO NOT SCALE FROM THIS PLAN UNLESS IT IS PRINTED AT A1. DO NOT USE UNLESS PRINTED IN COLOUR

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

Agreed Construction Exclusion Zone

No debris within construction exclusion zone

Comments/Action

No action at this time

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



Tree protection T23



Tree protection T14

Appendix 4

Hand Digging Methodology and Installation of Services within Root Protection Areas

Introduction

- Trees need roots to stay upright and to obtain water and nutrients from the soil
- Any excavation within the Root Protection Area of a tree may affect its stability and health
- Roots over 25mm in diameter are likely to be of particular structural significance
- Roots less than 25mm in diameter are likely to be important to the tree for survival and structural significance. Cutting many small roots may have an impact on tree health and stability
- Most tree roots are within 0.6 -1m from the soil surface
- Desiccation and exposure to rapid temperature change is likely to cause root death
- Hand digging carried out correctly is less likely to damage tree roots than digging with machinery
- All digging within the Root Protection Areas of trees should be supervised by an Arboriculturalist
- Whether digging is acceptable and how it should be carried out depends on tree species and characteristics (age, vigour, past management etc.)
- Site conditions are also important when deciding whether digging is acceptable (soil type, ground levels, existing structures etc.)
- Carry out a suitable risk assessment prior to starting work. In particular, take care when working in the vicinity of underground services

Why/What For?

- Service installation/maintenance
- Demolition
- Foundations
- Hard surface installations
- Decay detection

Relevant Documents

- British Standard 5837:2012 - Section 7.2 - Trees in Relation to Design, Demolition and Construction – Recommendations
- National Joint Utilities Group Volume 4 2007: Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook

Principles

The key principles are as follows:

- Avoid compaction of the soil when carrying out the works
- Sever as few roots as possible
- Do not leave damaged or poorly cut roots as these are likely to lead to decay in the future
- Do not let exposed roots dry out
- Do not use materials containing harmful chemicals or salt as these will harm the trees (including builders' sand)

How/What to Use?

Method 1 - Hand Digging Retaining all Roots Above 25mm in Diameter to British Standard 5837:2012 Section 7.2:

- Hand tools –pick, fork, spade, wheel barrow and trowel
- Brush - it is useful to brush away loose soil from exposed roots prior to cutting them
- Secateurs/sharp pull-saw - roots that need to be cut must be cut cleanly using suitable hand tools
- Damp Hessian sacking – this should immediately cover the sides of the trench down to a depth of 1m below ground level and is effective in preventing roots drying out following excavation
- Suitable back-fill - covering the exposed or cut roots with a 100mm layer of topsoil or a mixture of 50% composted organic matter and 50% un-compacted sharp sand is suitable
- Supervision - ***a suitably qualified and experienced Arboriculturalist should be present when the works are carried out***

Method 2 - Hand Digging Removing all Roots to a Depth of 1m Below Ground Level to British Standard 5837:2012 Section 7.2:

- Hand tools –pick, fork, spade, wheel barrow and trowel
- Brush - it is useful to brush away loose soil from exposed roots prior to cutting them
- Secateurs/sharp pull-saw - roots that need to be cut must be cut cleanly using suitable hand tools
- Damp Hessian sacking – this should immediately cover the sides of the trench down to a depth of 1m below ground level and is effective in preventing roots drying out following excavation
- Suitable back-fill - covering the exposed or cut roots with a 100mm layer of topsoil or a mixture of 50% composted organic matter and 50% un-compacted sharp sand is suitable
- Excavations below 1m from ground level can be carried out using an excavator or similar due to health and safety requirements
- Supervision - ***a suitably qualified and experienced Arboriculturalist should be present when the works are carried out***

Method 3 - Compressed Air Soil Displacement Combined with Hand Digging Retaining all Roots Above 5mm in Diameter to British Standard 5837:2012 Section 7.2:

- Air spade - this uses a high pressure jet of air, delivered from a compressor to a hand held lance
- Hand tools – pick, fork, wheel barrow and trowel
- Brush - it is useful to brush away loose soil from exposed roots prior to cutting them
- Secateurs/sharp pull-saw - roots that need to be cut must be cut cleanly using suitable hand tools
- Damp Hessian sacking – this should immediately cover the sides of the trench down to a depth of 1m below ground level and is effective in preventing roots drying out following excavation
- Suitable back-fill - covering the exposed or cut roots with a 100mm layer of topsoil or a mixture of 50% composted organic matter and 50% un-compacted sharp sand is suitable
- Supervision - ***a suitably qualified and experienced Arboriculturalist should be present when the works are carried out***

Method 4 - Trenchless Technique Retaining all Roots to British Standard 5837:2012 Section 7.7:

- Micro-tunnelling, thrust boring or surfaced launched directional drilling is designed to avoid open trenches and can provide single service runs for up to 150m between starting pits
- Starting pits should be located outside the Root Protection Areas of the retained trees or can be hand dug using **Method 1**
- Bore holes should be a minimum of 500mm below ground level
- Only water should be used to lubricate the mole or drill to prevent root death due to soil contamination
- Supervision of hand digging using **Method 1 - a suitably qualified and experienced Arboriculturalist should be present when the works are carried out**

Appendix 5

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:.....