HAYDEN'S
Arboricultural Consultants

Tree Survey, Arboricultural Impact Assessment
Arboricultural Method Statement & Tree Protection Plan
In Accordance with BS5837:2012

Proj. No **11119**	**139 Petersham Road, Richmond, London, TW10 7AB**		
Client:		David Salisbury Joinery Ltd	
Date of Report:	14/08/2024	Revision:	Original

Tree Survey, Arboricultural Impact Assessment, Arboricultural Method Statement & Tree Protection Plan – In Accordance with BS5837:2012

Summary

The purpose of this report is to provide a consideration of the arboricultural implications created by the proposed development. In accordance with the feasibility and planning sections of BS5837:2012 *"Trees in relation to design, demolition and construction – Recommendations"*, trees deemed to be within the influencing distance of the projected construction have been evaluated for quality, longevity and initial maintenance requirements. Where trees do not have to be removed for health and safety reasons, a detailed and objective assessment has been made of the consequences of the intended layout.

In this circumstance it is intended to demolish an existing garage and construct an orangery. As a result, thirteen individual trees and one hedge were inspected. The arboricultural related implications of the proposal are as follows:

1 In addition to trees which require felling irrespective of development, it is necessary to fell one category 'C' tree (T010) and one category 'C' hedge (H001) to achieve the proposed layout. Additionally, one tree requires minor surgery to permit construction.

2 One tree (T008) has been identified for removal irrespective of any development proposals. The removal of this tree coincides with the requirements of the proposed layout.

3 The alignment of the proposed orangery nominally intrudes within the root protection area (RPA) of one tree (T009) to be retained. This has only minor influence on the affected tree's RPA. As such it is considered appropriate to undertake linear root pruning thereby obviating the need for specialist construction techniques at these locations, as discussed at item 4.4.1.

4 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought prior to construction to demonstrate that the techniques and methods hereby proposed are achievable. In this particular circumstance it is necessary to contact the following:

- Structural Engineer (foundation design, item 4.4.1)

5 All trees and landscape features that are to remain as part of the development should suffer no structural damage provided that the findings within this report are complied with in full. This includes ensuring that protective fencing and ground protection are installed as detailed at items 4.6 and 5.1 of this report.

Contact Details

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Local Planning Authority – London Borough of Richmond upon Thames Council			
Address Civic Centre 44 York Street Twickenham Middlesex TW1 3BZ	**Tree Officer** Craig Ruddick	**Tel:** **E-mail:**	0845 612 2660 trees@richmond.gov.uk

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Contents

1.0 Introduction

1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by David Salisbury Joinery Ltd to prepare a Tree Survey, Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan for the existing trees at 139 Petersham Road, Richmond, London, TW10 7AB.

1.1.2 The site survey was carried out on the 31st July 2024. The relevant qualitative and quantitative tree data was recorded to assess the condition of the existing trees, their constraints upon the prospective development and the necessary protection and construction specifications required to allow their retention as a sustainable and integral part of the completed development.

1.1.3 Information is given on condition, age, size and indicative positioning of all the trees, both on and affecting the site. This is in accordance with the British Standard 5837:2012 *Trees in relation to design, demolition and construction - Recommendations.*

1.2 Scope of Works

1.2.1 The survey of the trees and any other factors are of a preliminary nature. The trees were inspected on the basis of the Visual Tree Assessment (VTA) method as developed by Mattheck and Breloer (1994). The trees were inspected from ground level with no climbing inspections undertaken. It is not always possible to access every tree and as such some measurements may have to be estimated. Trees with estimated measurements are highlighted in the schedule of trees. No samples have been removed from the site for analysis. The survey does not cover the arrangements that may be required in connection with the removal of existing underground services.

1.2.2 Whilst this is an arboricultural report, comments relating to non arboricultural matters are given, such as built structures and soil data. Any opinion thus expressed should be viewed as provisional and confirmation from an appropriately qualified professional sought. Such points are clearly identified within the body of the report.

1.2.3 An intrinsic part of tree inspection in relation to development is the assessment of risk associated with trees in close proximity to persons and property. Most human activities involve a degree of risk, with such risks being commonly accepted if the associated benefits are perceived to be commensurate. In general, the risk relating to trees tends to increase with the age of the trees concerned, as do the benefits. It will be deemed to be accepted by the client that the formulation of the recommendations for all tree management will be guided by the cost-benefit analysis (in terms of amenity) of the tree work.

1.3 Documentation

1.3.1 The following documentation was provided prior to the commencement of the production of this report:

- Email of instruction from Mr Grant received 10th July 2024
- Proposed site layout - drawing number 12880/03

2.0 The Site

2.1 Overview

2.1.1 The site comprises of a detached dwelling with St Peter's Church to the north, Petersham Road to the south and Church Lane to the west. Trees within the rear garden comprise of mixed species and maturity and provide a range of amenity benefits.

2.2 Soils

2.2.1 The soil type commonly associated with this site are generally freely draining slightly acid loams. They are of low fertility and typically support neutral and acid pastures, and deciduous woodland type habitats. This soil type constitutes approximately 15.5% the total English land mass.

2.2.2 The data given was obtained from a desk top study which provides indications of likely soil types. By definition, this information is not comprehensive and therefore any decisions taken with regards the management, usage or construction on site should be based on a detailed soil analysis.

2.2.3 Further to item 2.2.2, this report provides no information on soil shrinkability. It may be necessary for practitioners in other disciplines (e.g. engineers considering foundation design) to obtain this data as required.

2.3 Statutory Tree Protection

2.3.1 Conservation Area

The site is located within a locality identified by London Borough of Richmond upon Thames Council as a "Conservation Area". This is a planning designation that seeks to provide control over the built environment, but which also has provision for tree protection. The effect of this on anyone wishing to undertake work to trees within a Conservation Area is to require them to first submit 6 weeks written notice detailing the work they plan to undertake. No work may be carried during the 6-week period unless written permission has been received from London Borough of Richmond upon Thames Council. The Local Planning Authority (LPA) can only prevent works notified to them within the 6-week period by serving a Tree Preservation Order. If this happens, there is a right to object to the serving of the Order.

There are certain circumstances where written permission from the LPA may not be necessary before undertaking works. These include:

- Making a tree safe if it is an imminent threat to people or property.
- Removing deadwood or a dead tree.
- Trees with stem diameters of less than 75mm (measured at 1.5m from ground level). If the works being carried out are to help promote the growth of other trees then trees with stem diameters of less than 100mm (at 1.5m) may be removed or pruned.

Anyone wishing to undertake work as an exception to the written notification process are **required** to provide the LPA with 5 days' notice prior to attending to a tree which they deem as being dead or dangerous unless such works are required in an emergency. It is the tree owner's responsibility to provide proof that the tree was indeed dead or dangerous should this exception be challenged; hence, it is advisable always to request an inspection by the LPA prior to carrying out such operations.

Furthermore, even in the event of an emergency situation, there is still a duty to notify the LPA that work has been completed including supplying an explanation of the necessity. Failure to comply with the requirements of Conservation Area legislation can lead to a maximum fine of up to £20,000 per tree in the Magistrates Court. Fines in the Crown Court are unlimited.

This information was sourced using the LPA's Online Mapping System (as instructed by them) and to our best knowledge was current and accurate at the time the information was accessed. We would advise it prudent that before any tree work commences, this is checked directly with the LPA to confirm that their online mapping system is definitive.

2.3.2 If **detailed planning permission** is granted and as part of the relevant approval tree work is agreed as acceptable by the LPA, no **additional** written permission to proceed will be required provided that:

(i) the planning permission remains live
(ii) the works are in strict accordance with the specification of the extant planning permission
(iii) the works are being completed solely to implement the detailed planning permission.

3.0 Tree Survey

3.1 As part of this survey a total of thirteen individual trees and one hedge have been identified. These have been numbered T001 – T013 and H001, respectively.

3.2 An accurate topographical survey was not available at the time of inspection. The position of each tree shown on the attached drawing no. 11119-D-AMS has therefore been fixed by use of a hand-held GPS surveying unit. Given this, the position of the trees must be considered indicative, although drawing no. 11119-D-AMS provides a fair representation of the relationship of the trees as distributed across the site.

3.3 To provide a systematic, consistent and transparent evaluation of the trees included within this survey, they have been assessed and categorised in accordance with the method detailed in item 4.3 of *BS5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations"*. For further information, please see the attached Explanatory Notes.

3.4 The detailed assessment of each tree and its work requirements with priorities are listed in the attached Schedule of Trees.

3.5 Several items would benefit from tree surgery or additional investigation, be it for health and safety, cultural, aesthetic or structural reasons as detailed in the attached Schedule of Trees. Including the trees recommended for felling, the items requiring the **most urgent** intervention are as follows:

Within six months:

T001	Remove Ivy to 3m and re-inspect.
T002	Remove Ivy to 3m and re-inspect.
T005	Remove ties constricting stems at circa. 1m above ground level.

3.6 In accordance with item 4.2.4 (c) of BS5837:2012, the trees inspected and detailed within this report have been selected for inclusion due to the likely influence of any proposed development on the trees, rather than strictly adhering to the curtilage of the site. However, it must be understood that there may be trees beyond the site and not included in this survey which may exert an influence on the development. Where works for cultural, health and safety, quality of life or development purposes have been recommended on trees outside the ownership of the site, these can only progress with the agreement of the owner except where it involves portions of the trees overhanging the boundary.

4.0 Arboricultural Impact Assessment

4.1 The Proposal

4.1.1 The proposal seeks to demolish an existing garage and construct an orangery within the rear garden.

4.2 Access

4.2.1 Site access is unencumbered by the Root Protection Areas (RPA) of any trees to be retained. From a purely arboricultural perspective, it will therefore not be necessary to install a temporary load bearing road to protect tree roots.

4.3 Demolition

4.3.1 Demolition of the existing garage affects the theoretical RPA of T009. It is considered to be reasonably likely that the presence of H001 will have restricted root extension from T009 to the garage's footings. Nevertheless, to prevent damage to this tree work must only be completed with appropriate machinery or by hand within the calculated RPA and may only commence once protective fencing and ground protection has been installed. In the proximity of the retained tree, all walls and material must be demolished inwards into the footprint of the building and away from the stems (often referred to as "top down, pull back"). Additionally, all plant and vehicles engaged in demolition will either operate outside the theoretical RPA or run on a temporary load bearing surface to protect the underlying soil structure. All foundations or hard surfaces within the theoretical RPA are to be broken out with extreme care, either manually or with a breaker and small mini digger.

4.4 Construction

4.4.1 Construction of the orangery's foundations encroach within the calculated RPA of T009. As discussed at 4.3.1, it is considered to be reasonably likely that the presence of H001 and T010 will have restricted root extension from T009 at this location. Furthermore, extensive crown retrenchment has resulted in a small sized canopy that will tolerate the proposed root pruning. However, to ensure any roots which have permeated to the footprint of the new structure are not damaged, it is advised that precautionary excavation and root pruning is undertaken at the location shown on drawing no. 11119-D-AMS as part of the access facilitation pruning (AFP) works. This operation will obviate the need for specialised foundation construction methods in this situation. Given that there are retained trees in proximity to proposed construction, it is recommended that a Structural Engineer is consulted to assess the implications of the tree retention on the required foundation design.

4.4.2 It is understood that there are no new hard surfaces associated with this proposal.

4.5 Implications of Sloping Ground

4.5.1 The arboricultural implications of the proposed structures are based on an assumption that because there are no significant existing slopes on site, level changes will not occur within the RPA of trees that are shown to be retained.

4.6 Requirement for Tree Protective Measures

4.6.1 Prior to the commencement of demolition and immediately after the completion of the necessary tree work, protective fencing and ground protection will be installed on site. This must be fit for purpose, in full accordance with the requirements of BS5837:2012 and positioned as shown on the attached drawing no. 11119-D-AMS.

4.7 Compound

4.7.1 The site provides limited internal space to locate a construction compound outside the RPA of any trees that are to be retained. As such the project will require careful phasing to manage the storage of materials.

4.8 Phasing

4.8.1 The proposal involves the integration of a number of aspects that affect tree protection (e.g. – but not exclusively – storage of materials and root pruning). For this reason, the project must be carefully phased to ensure the highest level of protection for retained trees. Shown on the attached drawing no. 11119-D-AMS is an in-depth phasing recommendation to cover the salient operations on site as they affect retained trees.

4.9 Monitoring

4.9.1 In accordance with item 6.3 of BS5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission are complied with. Shown on the attached drawing no. 11119-D-AMS is an auditable monitoring schedule to assess the progress of key site events/activities.

4.9.2 In addition to the method statement flowchart/checklist, it is necessary to identify the key arboricultural responsibilities associated with the progression of the development. Accordingly, a draft “Statement of Supervision (Arboriculture)” has been included at Appendix H. The purpose of this document is to identify a definite decision making and data recording structure in the monitoring process, together with providing a list of specific inspection trigger points. Prior to works commencing on site, this document should be re-issued with contact names and document reference numbers included.

4.10 Tree Work to Facilitate Proposed Development

4.10.1 To enable the proposed development it will be necessary to undertake the following tree surgery works to retained trees:

Feature No	Description of Works Required	BS Category*
T009	Undertake linear root pruning at the location shown on drawing 11119-D-AMS	U

4.11 **Landscape Implications**

4.11.1 In addition to trees and landscape features necessitating removal for health and safety, cultural or quality of life reasons (as detailed in the attached Schedule of Works - Irrespective of Development), the items listed in the table below require felling to permit the proposed development to proceed:

Feature No	Reason for Removal	BS Category*	Visual Amenity Assessment*
H001	To facilitate construction of the proposed orangery	C	Moderate
T010	To facilitate construction of the proposed orangery	C	Low

* Please see definitions in the Explanatory Notes attached to this report.

4.12 **Post Development Implications**

4.12.1 No adverse arboricultural implications are considered reasonably foreseeable for the trees that remain provided that the recommendations of this report are complied with in full.

4.12.2 Due to the dynamic nature of trees and their interaction with the environment, their health and structural integrity is liable to change over time. As a result it is recommended that all trees on or adjacent to the site be inspected on an annual basis.

5.0 Design Advice, Arboricultural Method Statement & Tree Protection Plan

5.1 **Securing of Tree Structure and Root Protection Areas (RPA)**

5.1.1 The trees to be retained will be protected by the use of stout barrier fencing and ground protection installed in the positions indicated on the attached Arboricultural Impact Assessment & Tree Protection drawing no. 11119-D-AMS. This fencing and ground protection will be in accordance with the requirements of BS5837:2012.

5.1.2 All fencing provided for the safeguarding of trees will be installed prior to any demolition commencing on the site, therefore ensuring the maximum protection. This fencing, which must have all weather notices attached stating “Construction Exclusion Zone – No Access” will be regarded as sacrosanct and once erected will not be removed, or altered, without the prior consent of the LPA.

5.2 **Location of Site Office, Compound and Parking**

5.2.1 The position of the office, compound and parking will be agreed in writing with the LPA prior to commencement of any permitted development works. Any proposed re-location of these items through the various phases of development will be agreed prior to re-siting with the LPA.

5.3 On Site Storage of Spoil and Building Materials

5.3.1 Prior to and during all construction works on site, spoil or construction materials will not be stored within the RPA of any retained tree, even if the proposed development is to be within the RPA. This is to reduce to a minimum the compaction of the roots of the trees. Details of the RPA for each tree where no spoil or building materials will be stored are indicated on the attached Arboricultural Impact Assessment & Tree Protection drawing no. 11119-D-AMS.

5.3.2 Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipework shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

5.3.3 All material storage facilities and work areas must consider the effects of sloping ground on the movement of potentially harmful liquid spillages towards or into protected areas.

5.4 Programme of Works

5.4.1 All tree work, once approved by the LPA, will be carried out prior to any other development activity. Once completed, the proposed protective fencing and ground protection will be installed. All of this will be carried out prior to commencement of any development works on the site. Outline details of the proposed programme are given in the Design and Construction and Tree Care flow chart attached (Appendix G-1).

5.5 Tree Work

5.5.1 All tree work will be agreed with the LPA and will be carried out in line with BS3998:2010 (Recommendations for Tree Works). An appropriately qualified and insured arboricultural contractor will carry out the work. Any alterations to the proposed schedule of works will be agreed with the LPA prior to commencement of works.

5.6 Levels

5.6.1 Other than for any specific exception which may be referred to at item 4.0, no alterations to soil levels within the RPA of retained trees are proposed.

5.7 Services

5.7.1 There is an electricity supply to the existing garage and this will be utilised for the proposed orangery.

5.8 **Reporting and Monitoring Procedures**

5.8.1 In accordance with item 6.3 of BS5837:2012, the site and associated development should be monitored regularly by a competent Arboriculturalist to ensure that the arboricultural aspects of the planning permission (e.g. the installation and maintenance of protective measures and the supervision of specialist working techniques) are implemented. Furthermore, regular contact between the Site Manager and the Arboriculturalist allows them to effectively deal with and advise on any tree related problems that may occur during the development process. This system should be auditable. Should any issues arise during the arboricultural monitoring of the development the Arboriculturalist will contact the LPA and appropriate action taken only with the prior permission of David Salisbury Joinery Ltd and the LPA.

6.0 Recommendations

6.1 It is recommended that the measures detailed in this report are implemented in full to provide retained trees with the highest level of protection during the process of demolition and construction.

6.2 Tree work should be completed as detailed in the Schedule of Trees. Where this has been identified for reasons other than to permit development, this work should be completed within the advised timescales irrespective of any development proposals.

6.3 The tree work proposed as part of this survey are recommended to mitigate any identified problems that may be caused by trees in close proximity to the proposed development. To this end, should these recommendations be overruled, this survey stands as the opinion of Hayden's Arboricultural Consultants Limited and therefore any damage or injury caused by trees recommended by this practice for felling or tree work, to which the proposed schedule of works has been altered or the tree has been requested to be retained by the LPA, cannot be the responsibility of this practice.

7.0 Limitations & Qualifications

Tree inspection reports are subject to the following limitations and qualifications.

General exclusions

Unless specifically mentioned, the report will only be concerned with above ground inspections. No below ground inspections will be carried out without the prior confirmation from the client that such works should be undertaken.

The validity, accuracy and findings of this report will be directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third-party data will be undertaken. Hayden's Arboricultural Consultants Limited will not be responsible for the recommendations within this report where essential data are not made available or are inaccurate.

This report will remain valid for one year from the date of inspection subject to the recommendations specified within being adhered to. It must also be appreciated that recommendations proposed within this report may be superseded by extreme weather, or any other unreasonably foreseeable events.

However, if any additional alterations to the property or soil levels are carried out and/or further tree works undertaken other than specified within the report, it will become invalid and a new tree inspection strongly recommended.

It will be appreciated, and deemed to be accepted by the client and their insurers, that the formulation of the recommendations for the management of trees will be guided by the following: -

1. The need to avoid reasonably foreseeable damage.
2. The arboricultural considerations - tree safety, good arboricultural practice (tree work) and aesthetics.

The client and their insurers are deemed to have accepted the limitation placed on the recommendations by the sources quoted in the attached report. Where sources are limited by time constraints or the client, this may lead to an incomplete quantification of the risk.

Signed:

August 2024
For and on Behalf of Hayden's Arboricultural Consultants Limited

8.0 References

British Standards Institute. (2010). *Recommendations for Tree Work BS3998:2010* BSI, London.

British Standards Institute. (2012). *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012* BSI, London.

Ministry of Housing, Communities & Local Government. (2014). *Tree Preservation Orders and trees in conservation areas.* London: Ministry of Housing, Communities & Local Government.

Mattheck & Breloer, H. (1994). *Research for Amenity Trees No.4: The Body Language of Trees*, HMSO, London.

NHBC Standards (2023) *Chapter 4.2 'Building Near Trees'.* National House-Building Council.

NJUG 4 Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Issued 16 November 2007.

Lonsdale, D. (1999). *Research for Amenity Trees No 7: Principles of Tree Hazard Assessment and Management*, HMSO, London.

Strouts, R.G. & Winter, T.G. (1994). *Research for Amenity Trees No.2: Diagnosis of Ill-Health in Trees*. Department of the Environment, HMSO, London.

9.0 Appendices

Appendix	**A**	Species List & Tree Problems
Appendix	**B**	Schedule of Trees
Appendix	**C**	Schedule of Works - Irrespective of Development
Appendix	**D**	Schedule of Works to Allow Development
Appendix	**E**	Explanatory Notes
Appendix	**F**	Tree Preservation Order Enquiry/Response
Appendix	**G**	Advisory Information & Sample Specifications

1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care
2. European Protected Species and Woodland Operations Checklist (v.4)
3. BS 5837:2012 Figure 2 - Default specification for protective barrier
4. BS 5837:2012 Figure 3 - Examples of above-ground stabilising systems
5. Figure 4 Detail of protective barrier where construction encroaches within BS5837:2012 Root Protection Area
6. Multitrack Ground Protection
7. Air Spade/Air Excavation Specification

Appendix	**H**	Statement of Supervision
Appendix	**I**	Drawing no. 11119-D-AMS

Appendix A - Species List & Tree Problems

Species List:

Bay Laurel	*Laurus sp*
Cypress	*Cupressus sp*
English Yew	*Taxus sp*
False Acacia	*Robinia sp*
Holly	*Ilex sp*
Kohuhu	*Pittosporum sp*
Monterey Cypress	*Cupressus sp*

Tree Problems:

This gives a brief description of the problems identified in the attached Tree Survey.

Name: Deadwood	
Symptoms/damage type and cause:	This relates to dead branches in the crown of the tree. In the most cases, this is caused by the natural ageing process of the tree or shading due to its close proximity to neighbouring trees. However, in some situations, it may be related to fungal, bacterial or viral infection.
Consequence:	Depending upon the location and mass of dead wood removal of the affected tissue may be necessary to prevent harm to persons or property as the wood will become unstable as it decays and in some circumstances is likely to fall from the tree with little or no warning.
Control:	Detailed monitoring should be undertaken on those trees showing signs of excessive deadwood production to identify the underlying cause.
Species affected:	Most tree species.
Images:	 

Name: Epicormic growth	
Symptoms/damage type and cause:	This is the production of numerous shoots on the main stem and branches of the tree. They are produced by the bursting into life of otherwise dormant buds. It is commonly associated with elevated levels of stress on the tree.
Consequence:	Whilst epicormic growth is usually symptomatic of an issue elsewhere within the tree, heavy proliferation can cause the trees resources to become depleted or may mask significant structural weaknesses within the framework of the tree.
Control:	Pruning off epicormic growth may be necessary to improve the visual amenity of the tree or prevent the development of a hazard or obstruction. No direct means of prevention are available other than therapeutic measures to alleviate stresses on the tree.
Species affected:	Most tree species, including European Lime, Willow species, Sweet Chestnut, and Silver Maple.
Images:	  

Name: *Hedera helix* (Ivy)	
Symptoms/damage type and cause:	Ivy may grow to varying degrees on all areas of a tree from the base to the upper crown. It is possible that in doing so it will out-compete the host tree for available light thereby suppressing the host.
Consequence:	This is generally only harmful to the tree on already unhealthy specimens which may be constricted by large ivy stems around the trunk or may have their top growth suppressed by a mass of flowering shoots in the crown. Ivy can also mask potentially dangerous faults on a tree.
Control:	Ivy should only be removed if absolutely necessary because it provides abundant cover to wildlife and then by severing twice close to the ground and removing a length of stem thereby causing the gradual dying away of the aerial parts of the plant providing extended benefit to wildlife whist relieving the pressure on the tree.
Species affected:	Most trees can be affected.
Images:	 

Name: ***Seiridium cardinale*** **(Coryneum Canker)**	
Symptoms/damage type and cause:	This fungal pathogen affects members of the Cypress (*Cupressaceae*) family of conifers. Branches or twigs anywhere in the crown suddenly die and turn gingery brown where the fungus forms a canker and girdles the entire twig or branch, cutting off the supply of water and nutrients.
Consequence:	Often the infection is so extensive that the extent of pruning required reduces tree vitality and increases the risk of crown damage in storm events.
Control:	Small outbreaks can be controlled by pruning out infected material at a point well inside the point of dieback. Badly diseased trees should be replaced with resistant species.
Species affected:	*Cupressus* and *X Cupressus* spp.
Images:	 

Appendix B

Schedule of Trees

SCHEDULE OF TREES (AIA) 139 Petersham Road, Richmond, London,

Surveyed By: Nick Hayden Date: 31/07/2024
Managed By: Nick Hayden

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m²)	Aspect	Aspect	SULE	Ground Cover						
H001	Cypress	350	11.5		Moderate	N6, E4, S6, W4.5	August 2024: 8x stems, one of which is dead. Poor quality feature. No notable change since previous inspection. August 2022: Partially managed, lapsed hedge line. 7x stems ranging from 140 to 350mm DBH and 4.5 to 11.5m high. Largest DBH applied to hedge. Northernmost stems topped at circa. 7m above ground level (agl) and display poor form and condition. Central stem is dying. Southern stems partially reduced. Garage within 1.5m to west and greenhouse to east. An unremarkable feature.	C2	No work required.	4	Fell to facilitate construction of the proposed orangery.	0
		4.2	0-2m		EM	High						
Yes		55.4			10+ years	Bare earth;Light undergrowth						
T001	Cypress	250	9		Moderate	N2.5, E2.5, S4.5, W2.5	August 2024: No notable change since previous inspection. August 2022: Located circa. 2.5m from dwelling. Boundary wall circa. 1m to south. Suppressed specimen that appears to have been topped. Heavily clad in Ivy which impeded a detailed inspection of base, stem and crown. Tapping the exposed sections of the stem with a nylon hammer did not reveal the presence of any notable decay. Mature Wisteria throughout crown. Crown displays moderate to reduced vigour. Overhangs highway to south.	C2	Remove Ivy to 3m and re-inspect.	2		
		3	2.1-4m		SM	High						
Yes		28.3			10+ years	Ivy						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m^2)	Aspect	Aspect	SULE	Ground Cover						
T002	Cypress	380	13		High	N3.5, E3.5, S5, W6	August 2024: No notable change since previous inspection. August 2022: Located circa. 6m from dwelling. Boundary wall circa. 1m to south. Heavily clad in Ivy which impeded a detailed inspection of base and stem. Tapping the exposed sections of the stem with a nylon hammer did not reveal the presence of any notable decay. Stem bifurcates at circa. 2.5m agl, detailed inspection of union not possible due to dense Ivy. Mature Wisteria throughout upper crown. Crown displays moderate vigour. Overhangs highway to south.	C2	Remove Ivy to 3m and re-inspect.	2		
		4.56	2.1-4m		EM	High						
Yes		65.3			10+ years	Ivy						
T003	Cypress	270	12.5		High	N2.5, E2.5, S3, W3	August 2024: Ivy covers base and lower stem. Otherwise, no notable change since previous inspection. August 2022: Located circa. 12m from dwelling. Boundary wall circa. 1m to south. Tapping the exposed sections of the stem with a nylon hammer did not reveal the presence of any notable decay. Mature Wisteria throughout upper crown. Crown displays moderate vigour. Overhangs highway to south.	C2	No work required.	4		
		3.24	0-2m		EM	High						
Yes		33			10+ years	Ivy;Shrub bed						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m^2)	Aspect	Aspect	SULE	Ground Cover						
T004	Holly	220	6.5		Moderate	N2.5, E2.5, S3, W2	August 2024: No notable change since previous inspection. August 2022: Located circa. 15m from dwelling. Boundary wall circa. 0.75m to south. Lower branches resting on wall and growing through mature Wisteria running along top of wall. Historic soil build up around base and lower stem. Tapping the exposed sections of the stem with a nylon hammer did not reveal the presence of any notable decay. Mature Wisteria throughout crown. Congested crown. Crown displays moderate vigour. Overhangs highway to south.	C2	No work required.	4		
		2.64	0-2m		EM	Low						
Yes		21.9			10+ years	Shrub bed						
T005	English Yew	110	6		Moderate	N2, E2, S1.5, W2	August 2024: No notable change since previous inspection. August 2022: Located circa. 20m from the dwelling. Recorded as a multi-stemmed specimen. Ties around stems starting to constrict stems. Tight unions. Reasonable vigour.	C2	Remove ties constricting stems at circa. 1m agl.	2		
		1.32	0-2m		Y	Moderate						
Yes		5.5			10+ years	Shrub bed						
T006	English Yew	110	6.5		Moderate	N2, E2, S1.5, W1.5	August 2024: No notable change since previous inspection. August 2022: Located circa. 22m from the dwelling. Slightly asymmetrical crown. Reasonable vigour.	C2	No work required.	4		
		1.32	0-2m		Y	Moderate						
Yes		5.5			10+ years	Shrub bed						
T007	Bay Laurel	100	4.5		Low	N2, E2, S1, W2	August 2024: No notable change since previous inspection. August 2022: Multi-stemmed. Suppressed specimen. Reasonable vigour.	C2	No work required.	4		
		1.2	0-2m		Y	Moderate						
Yes		4.5			10+ years	Shrub bed						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m^2)	Aspect	Aspect	SULE	Ground Cover						
T008	Monterey Cypress	650	11.5		High	N4.5, E6, S5.5, W6	August 2024: Dieback due to Coryneum canker has progressed since previous visit. Large deadwood over highway and dieback throughout crown. Limited SULE. BS category downgraded since previous inspection. August 2022: Located within 0.3m of boundary wall to south. Two existing outbuildings restrict access to base. Detailed inspection of base and lower stem therefore impeded and dimensions estimated. Stem likely to be causing direct damage to wall given proximity. Multi-stemmed from circa. 3.5m agl, detailed inspection of unions impeded however evidence of included unions throughout crown. Tear out wounds lower crown. Congested canopy. Dense Wisteria throughout upper crown. Deadwood and dieback evident, most likely due to Coryneum Canker. Stem resting on circa. 1m wooden fence on top of boundary wall.	U	Fell.	3		
		7.8	2.1-4m		M	High						
Yes		191.1			<10 years	Building						
T009	False Acacia	1240	10		Low	N5, E3, S5, W6	August 2024: No notable change since previous inspection. August 2022: Located circa. 19.5m from dwelling in centre of garden. Dense Ivy impeded a detailed inspection of base and stem. DBH measured over Ivy. Tapping exposed sections of lower stem with nylon hammer suggests extensive decay present in northern and southern aspects of stem. Crown retrenchment and dieback extensive. Small offshoots and mature epicormic stem growth form only live crown, dimensions of which are circa. 7m high and 2m crown spread. Lights wrapped around tree and deadwood.	U	No work required.	4	Undertake linear root pruning at the location shown on drawing 11119-D-AMS to facilitate construction of the orangery.	0
		14.88	2.1-4m		OM	Moderate						
Yes		695.6			<10 years	Shrub bed;Grass						

TreeNo	Species	DBH	Height		Visual	Crown Spread	Problems / Comments	BS Cat	Work Required (TS)	Priority (TS)	Work Required (AIA)	Priority (AIA)
		Min Dist	Crown Base	Lowest Branch	Age	Water Demand						
On site		RPA (m^2)	Aspect	Aspect	SULE	Ground Cover						
T010	English Yew	160	6		Low	N1, E1.5, S2, W2	August 2024: No notable change since previous inspection. August 2022: Multi-stemmed from circa. 1.7m agl, tight unions. Asymmetric crown. Reasonable vigour.	C2	No work required.	4	Fell to facilitate construction of the proposed orangery.	0
		1.92	0-2m		SM	Moderate						
Yes		11.6			10+ years	Gravel						
T011	Cypress	400	14		Moderate	N3, E2.5, S2.5, W3	August 2024: No notable defects around base and on lower stem in sections that could be observed. No notable change since previous inspection. August 2022: Boundary wall circa. 0.5m to north. Detailed inspection of base partially impeded by structure and shrubbery. Lower branches pruned. Reasonable vigour.	C2	No work required.	4		
		4.8	2.1-4m		M	High						
Yes		72.4			10+ years	Ivy;Shrub bed						
T012	Pittosporum	280	9		Moderate	N3.5, E3, S3, W2.5	August 2024: No notable change since previous inspection. August 2022: Decking and garden structure around base. Multi-stemmed. Partially Ivy clad. Reasonable vigour.	C2	No work required.	4		
		3.36	2.1-4m		EM	Moderate						
Yes		35.5			10+ years	Other						
T013	Bay Laurel	240	7		Moderate	N2.5, E1, S2, W2	August 2024: No notable change since previous inspection. August 2022: Restricted rooting environment. Asymmetric crown. Reasonable vigour.	C2	No work required.	4		
		2.88	2.1-4m		EM	Moderate						
Yes		26.1			10+ years	Shrub bed						

Appendix C

Schedule of Works - Irrespective of Development

SCHEDULE OF WORK

139 Petersham Road, Richmond, London,

Surveyed By: Nick Hayden
Surveyed: 31/07/2024
Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
T001	Cypress	Remove Ivy to 3m and re-inspect.	**2**
T002	Cypress	Remove Ivy to 3m and re-inspect.	**2**
T005	English Yew	Remove ties constricting stems at circa. 1m agl.	**2**
T008	Monterey Cypress	Fell.	**3**

Appendix D

Schedule of Works to Allow Development

SCHEDULE OF WORKS (AIA)

139 Petersham Road, Richmond, London,

Surveyed By: Nick Hayden
Surveyed: 31/07/2024
Managed By: Nick Hayden

Tree No.	Species	Work required	Priority
H001	Cypress	Fell to facilitate construction of the proposed orangery.	**0**
T009	False Acacia	Undertake linear root pruning at the location shown on drawing 11119-D-AMS to facilitate construction of the orangery.	**0**
T010	English Yew	Fell to facilitate construction of the proposed orangery.	**0**

Appendix E

Explanatory Notes

Explanatory Notes

HAYDEN'S Arboricultural Consultants

Categories

Below is an explanation of the categories used in the attached Tree Survey.

No Identifies the tree on the drawing.

Species Common names are given to aid understanding for the wider audience.

BS 5837 Main Category Using this assessment (BS 5837:2012, Table 1), trees can be divided into one of the following simplified categories, and are differentiated by cross-hatching and by colour on the attached drawing:

Category A - Those of high quality with an estimated remaining life expectancy of at least 40 years;

Category B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years;

Category C - Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm;

Category U - Those trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS 5837 Sub Category Table 1 of BS 5837:2012 also requires a sub category to be applied to the A, B, C, and U assessments. This allows for a further understanding of the determining classification as follows:

Sub Category 1 - Mainly arboricultural qualities;

Sub Category 2 - Mainly landscape qualities;

Sub Category 3 - Mainly cultural values, including conservation .

Please note that a specimen or landscape feature may fulfil the requirements of more than one Sub Category.

DBH (mm) Diameter of main stem in millimetres at 1.5 metres from ground level. Where the tree is a multi-stem, the diameter is calculated in accordance with item 4.6.1 of BS 5837:2012.

Age Recorded as one of seven categories:

Y Young. Recently planted or establishing tree that could be transplanted without specialist equipment, i.e. less than 150 mm DBH.

S/M Semi-mature. An established tree, but one which has not reached its prospective ultimate height.

E/M Early-mature. A tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread.

M Mature. A mature specimen with limited potential for any significant increase in size, even if healthy.

O/M Over-mature. A senescent or moribund specimen with a limited safe useful life expectancy. Possibly also containing sufficient structural defects with attendant safety and/or duty of care implications.

D Dead.

Height	Recorded in metres, measured from the base of the tree.
Crown Base	Recorded in metres, the distance from ground and aspect of the lowest branch material.
Lowest Branch	Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.
Life Expectancy	Relates to the prospective life expectancy of the tree and is given as 4 categories: 1 = 40 years+; 2 = 20 years+; 3 = 10 years+; 4 = less than 10 years.
Crown Spread	Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.
Minimum Distance	This is a distance equal to 12 times the diameter of the tree measured at 1.5 metres above ground level for single stemmed trees and 12 times the average diameter of the tree measured at 1.5 metres above ground level tree for multi stemmed specimens. (BS 5837:2012, section 4.6).
RPA	This is the Root Protection Area, measured in square metres and defined in BS5837:2012 as "a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority". The RPA is shown on the drawing.. Ideally this is an area around the tree that must be kept clear of construction, level changes of construction operations. Some methods of construction can be carried out within the RPA of a retained tree but only if approved by the Local Planning Authority's tree officer.
Water Demand	This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 "Building Near Trees".
Visual Amenity	Concerns the planning and landscape contribution to the development site made by the tree, hedge or tree group, in terms of its amenity value and prominence on the skyline along with functional criteria such as the screening value, shelter provision and wildlife significance. The usual definitions are as follows: Low — An inconsequential landscape feature. Moderate — Of some note within the immediate vicinity, but not significant in the wider context. High — Item of high visual importance.
Problems/ Comments	May include general comments about growth characteristic, how it is affected by other trees and any previous surgery work; also, specific problems such as deadwood, pests, diseases, broken limbs, etc.
Work Required (TS)	Identifies the necessary tree work to mitigate anticipated problems and deal with existing problems identified in the "Problems/comments" category.

Work Required (AIA)	Identifies the tree work specifically necessary to allow a proposed development to proceed.
Priority	This gives a priority rating to each tree allowing the client to prioritise necessary tree works identified within the Tree Survey. **1** Urgent – works required immediately; **2** Works required within 6 months; **3** Works required within 1 year; **4** Re-inspect in 12 months, **0** Remedial works as part of implementation of planning consent.

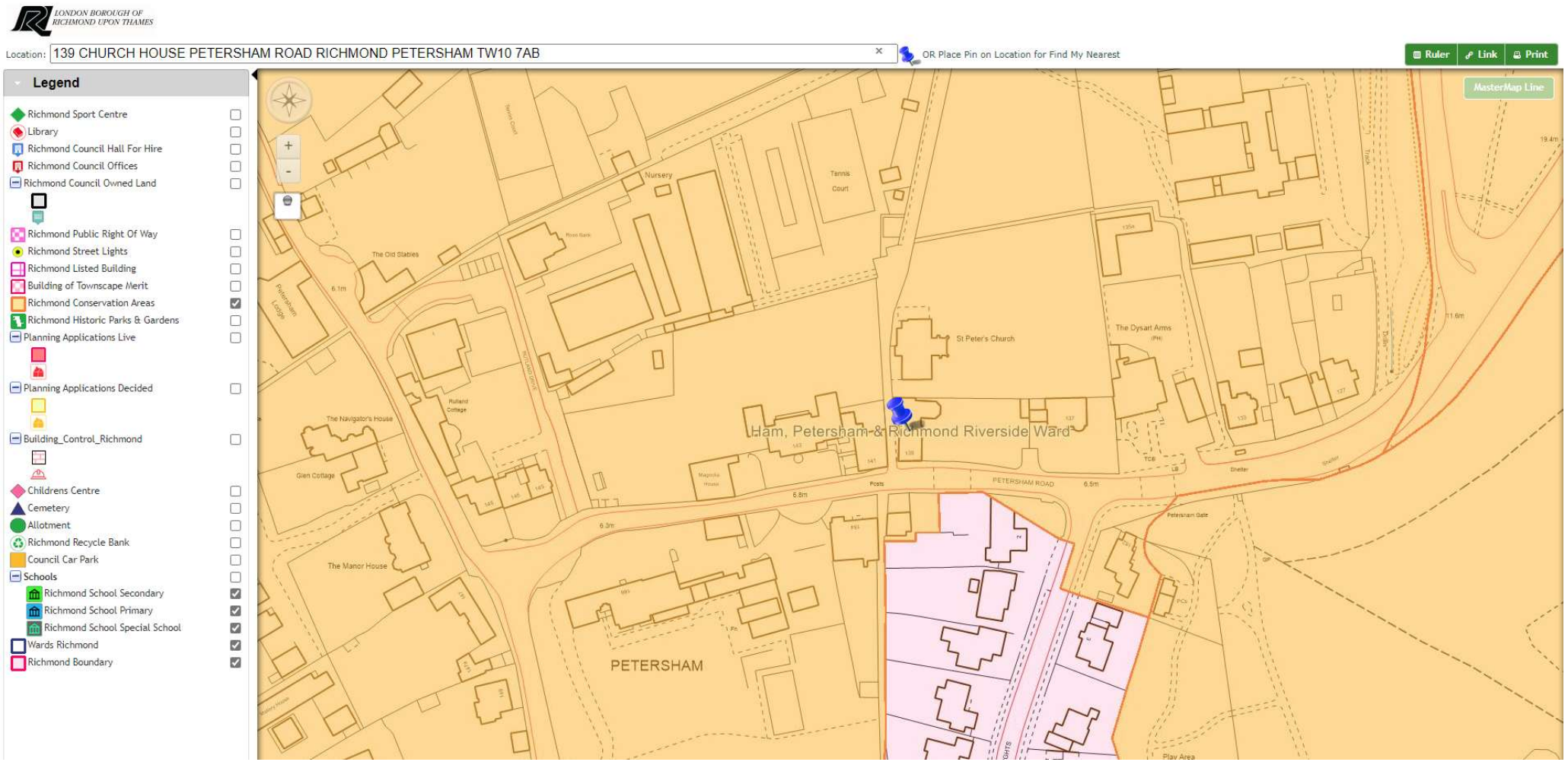
BS 5837:2012 Terms and Definitions

Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. *NOTE - a competent person is expected to be able to advise on the best means by which the recommendations of this British Standard may be implemented.*
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	Area based on the root protection area from which access is prohibited for the duration of a project.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision. **NOTE** - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
Structure	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Tree Protection Plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. **NOTE** - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

Appendix F

Tree Preservation Order Enquiry/Response

Conservation Area Online Mapping Extract



Beth Martin

From: trees@richmond.gov.uk
Sent: 09 August 2024 14:15
To: Beth Martin
Subject: RE: TPO Enquiry | 11119 | 139 Petersham Road, Richmond, London, TW10 7AB

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Beth Martin,

Thank you for your email.

I can confirm this guidance is still correct, there are no TPO's on this property.

The address is however within a conservation area, please complete a tree works application for any tree works.

http://www.richmond.gov.uk/protected_trees

You will receive a decision on your application within 6 weeks.

We are conducting a Customer Experience Survey to gather customer feedback to help improve our services. The survey only takes 5 minutes and can be completed by using the link below.
www.richmond.gov.uk/customer_feedback

Kind regards

Jamie Senitt-Sargent
Corporate Customer Services
Serving Richmond and Wandsworth Councils
Tel: 0208 891 1411
www.richmond.gov.uk / *www.wandsworth.gov.uk*

Follow us on social media or sign up to our weekly newsletter to keep up to date with council news & service updates
Newsletter: www.richmond.gov.uk/news
Twitter/X: @LBRUT_help

There is now a new way to log your report!
Did you know you can now log any reports directly on the ***My Richmond App****?*
My Richmond App is linked directly to many of our services and creates a request directly to resolve issues that you have raised.
You can also view your Council Tax account, get a virtual version of your Richmond Card, see local planning applications, and check everyday information personal to your address through the app.
You can download the My Richmond App on the App store or through Google Play. Find out more on our website - My Richmond App

Whilst you await for your query to be dealt with, you may find information on the following webpages useful: **Richmond.gov.uk**

Richmond Cost of Living Hub
Support available in the borough to help with the cost of living.
You can also find out what you can do to help.

We'd love to hear your feedback. Please click the link to answer a short survey:

From: bethm@treesurveys.co.uk
Sent: 09/08/2024 10:20:24

To: trees@richmond.gov.uk
Subject: TPO Enquiry | 11119 | 139 Petersham Road, Richmond, London, TW10 7AB

Good Morning,

Could you please advise if the attached advice received in 2022 about TPOs at 139 Petersham Road, Richmond, London, TW10 7AB still applies?

I have attached a site map for your use.

Many thanks in advance for your help,

Kind Regards

Beth Martin
Administrator

HAYDEN'S
Arboricultural Consultants

Tel: 01284 765391 info@treesurveys.co.uk **www.treesurveys.co.uk**

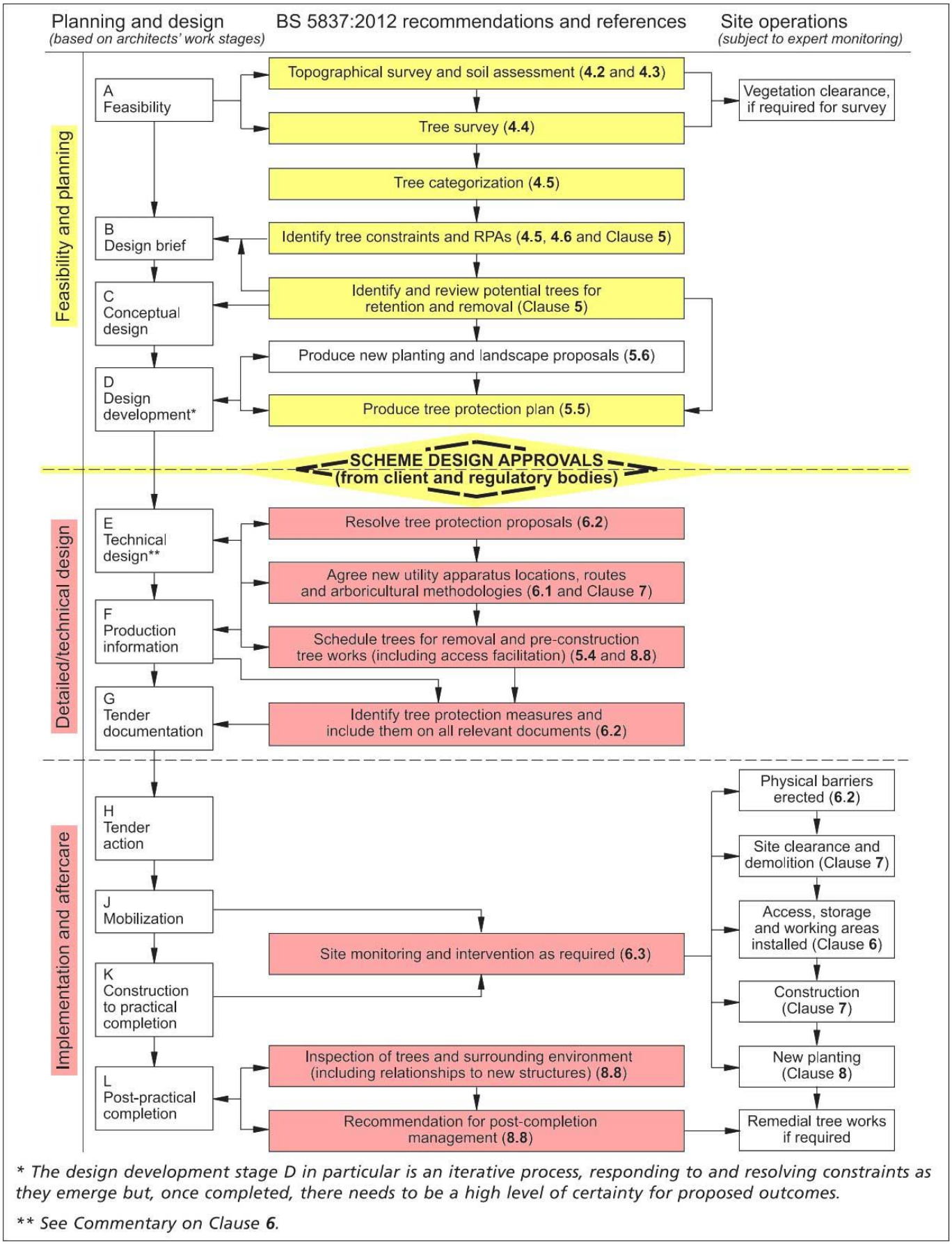
Head Office: 5 Moseley's Farm Business Centre, Fornham All Saints, Bury St. Edmunds, Suffolk, IP28 6JY

FACEBOOK TWITTER LINKEDIN INSTAGRAM

Appendix G

Advisory Information & Sample Specifications

1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care



** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause **6**.*

2.

European Protected Species and woodland operations. (V4)

Complete all sections of the Checklist

Checklist

1 Are you within, or close to, the known mapped range of any of the protected species OTHER THAN BATS which are potentially everywhere? Tick any that apply.
See distribution maps in the Good Practice Guidance for each species -

- ☐ Dormice
- ☐ Otters
- ☐ Great crested newts
- ☐ Sand lizards
- ☐ Smooth snakes

YES / NO

2 Does your wood contain any of the following habitats? Tick any that apply.

- ☐ Old trees with holes and crevices which might be used bats
- ☐ Species rich scrub/coppice, early growth stage plantations and forest interfaces
- ☐ Rivers on which otters might be found
- ☐ Ponds which might be occupied by great crested newts
- ☐ Open areas on heathy soils

YES / NO

3 Have any of the protected species been recorded in this wood or on adjoining sites? Tick any that apply.
Indicate which sources of information you have checked:

- ☐ National Biodiversity Network (www.nbn.org.uk)
- ☐ Local Biological Records Centre
- ☐ Local Wildlife Trust
- ☐ Other

Specify Other:

YES / NO

4 Have your inspections or any expert surveys found any of the following signs or evidence? Tick any that apply.

- ☐ Signs (e.g. otter spraint, nuts gnawed by dormice, leaves folded by newts)
- ☐ Sightings (or echo-location)
- ☐ Potential breeding or roosting sites (e.g. veteran trees, old trees with crevices, riverside hollow trees, ponds, timber stacks, large fallen deadwood)
- ☐ Confirmed breeding or roosting sites (i.e. evidence of sites actually being used)

Details:

YES / NO

CHECK POINT

If you have answered NO to ALL of the above then only bats need to be considered in your operations.

If you have answered YES to any of the above then the species concerned must be considered as well as bats.

5 Do the operations comply with Good Practice for bats and any other species found (or likely to be found in your wood) or can the operations be modified to do so?
Details: Use reverse of form to expand as required:

YES / NO

6 Whether or not a licence is required...
Has the information been communicated to operators (including the location of breeding sites and sensitive areas)? Tick any that apply.

- ☐ Included in documentation (e.g. contract, letter of instruction, site assessment or other management plan)
- ☐ Shown to operators and/or their supervisor
- ☐ Marked with paint or hazard tape
- ☐ Shown on the site plan

Other means:

YES / NO

7 Have arrangements for supervision been made to ensure Good Practice guidance is complied with during the operations?
Details:

YES / NO

Details

Name of Wood:

Grid Reference:

Area: (ha)

Date of Assessment:

Name of Assessor:

Notes

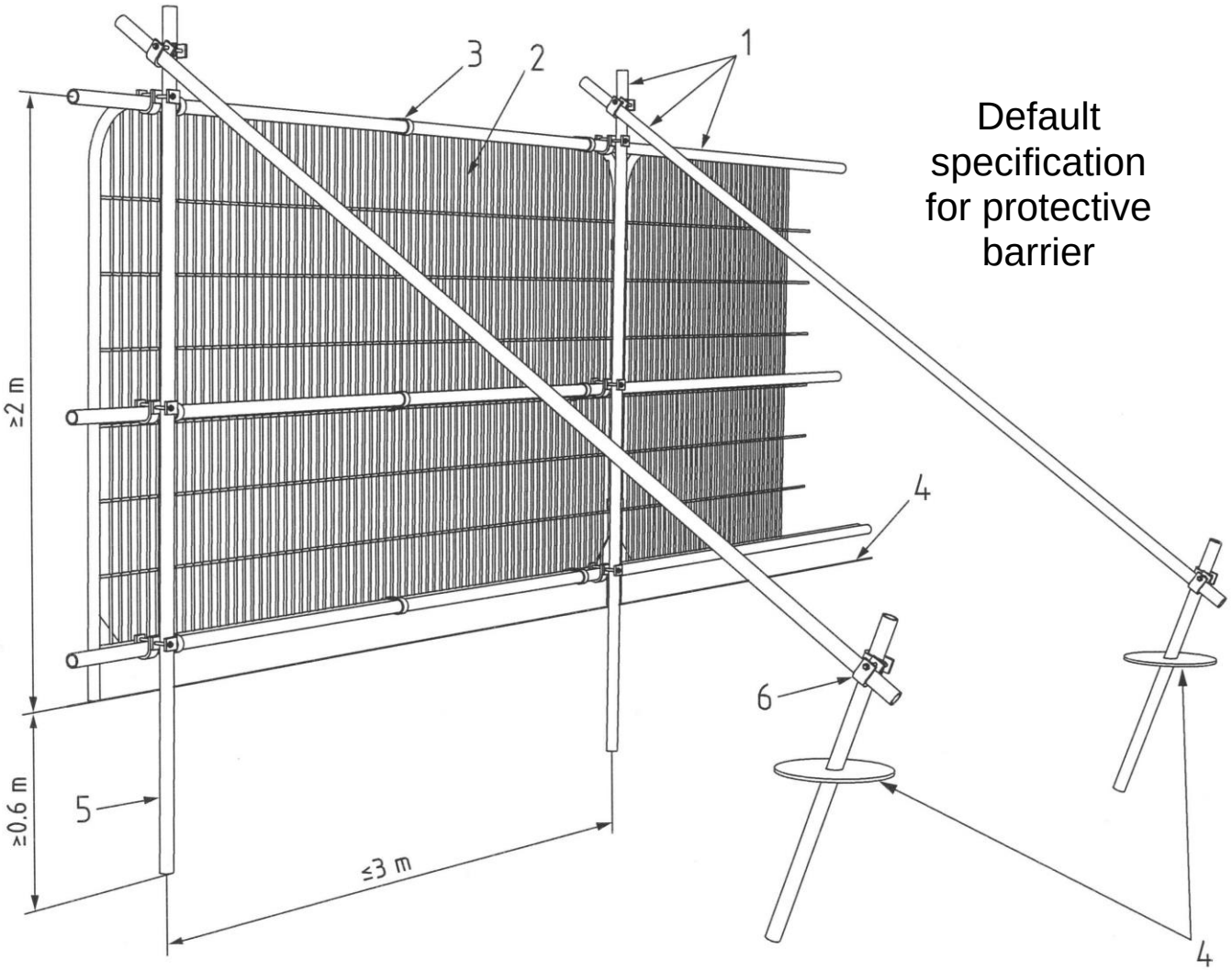
A licence is not required but continue to sections 6 and 7 below

You will need to obtain a licence BEFORE carrying out the work (see EPS Licence Application Forms and Notes)

You may commit an offence if you do not tell your operators about the protected species in your wood.

You may commit an offence if you do not take steps to ensure that your operators comply with the Good Practice guidance.

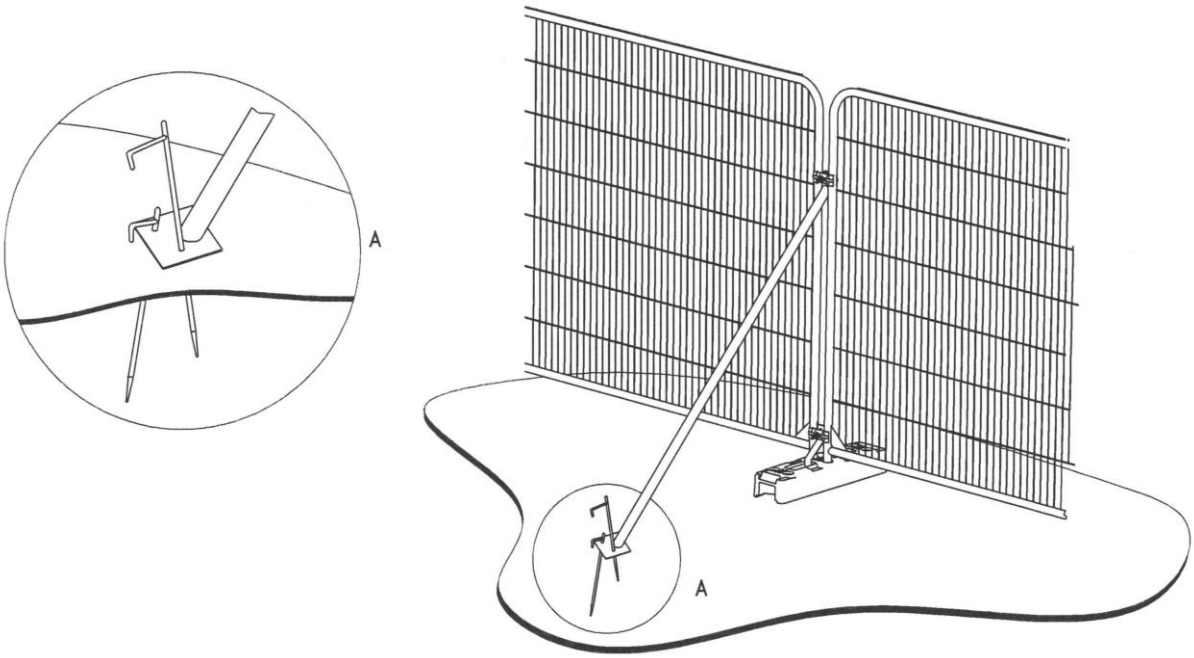
3. BS 5837:2012 Figure 2: Default specification for protective barrier



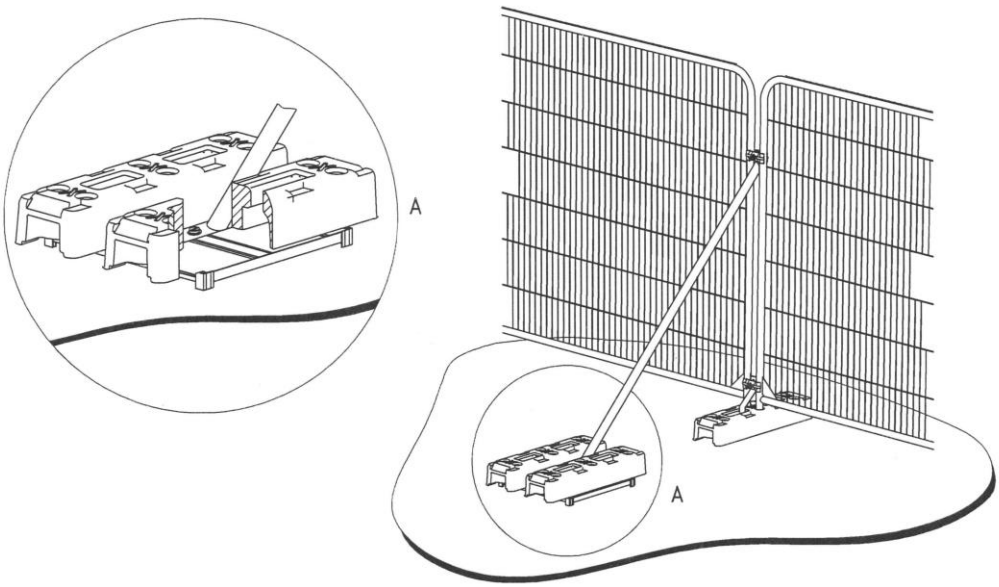
Key

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

4. BS 5837:2012 Figure 3: Examples of above-ground stabilizing systems

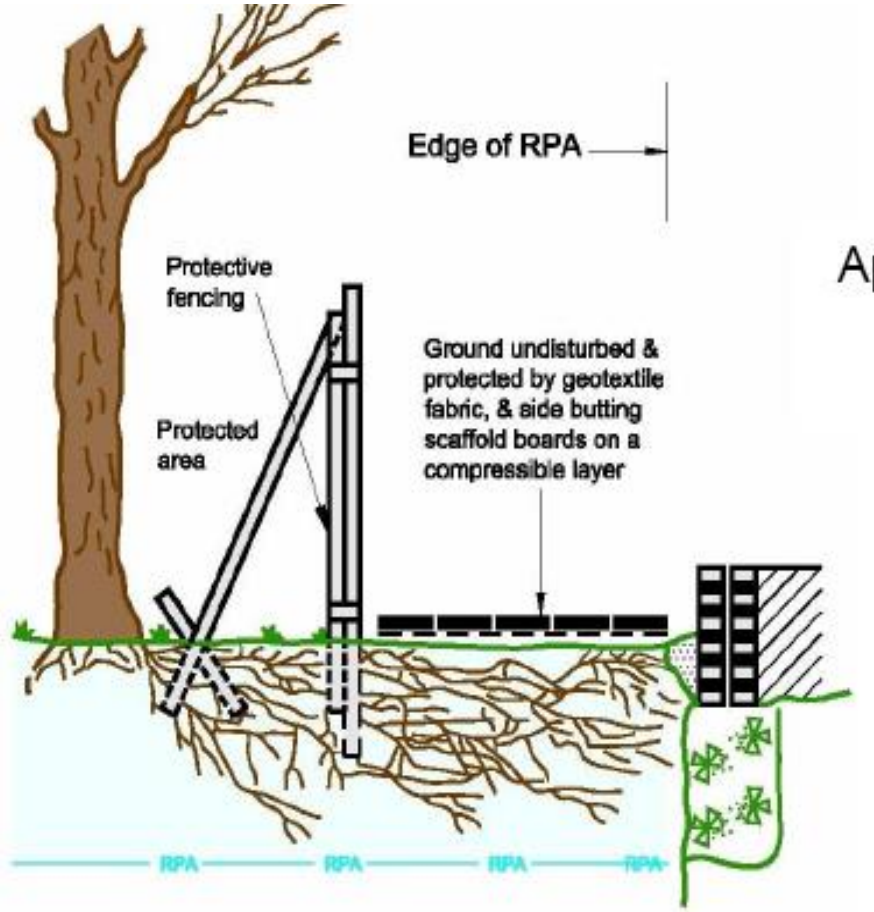


a) Stabilizer strut with base plate secured with ground pins



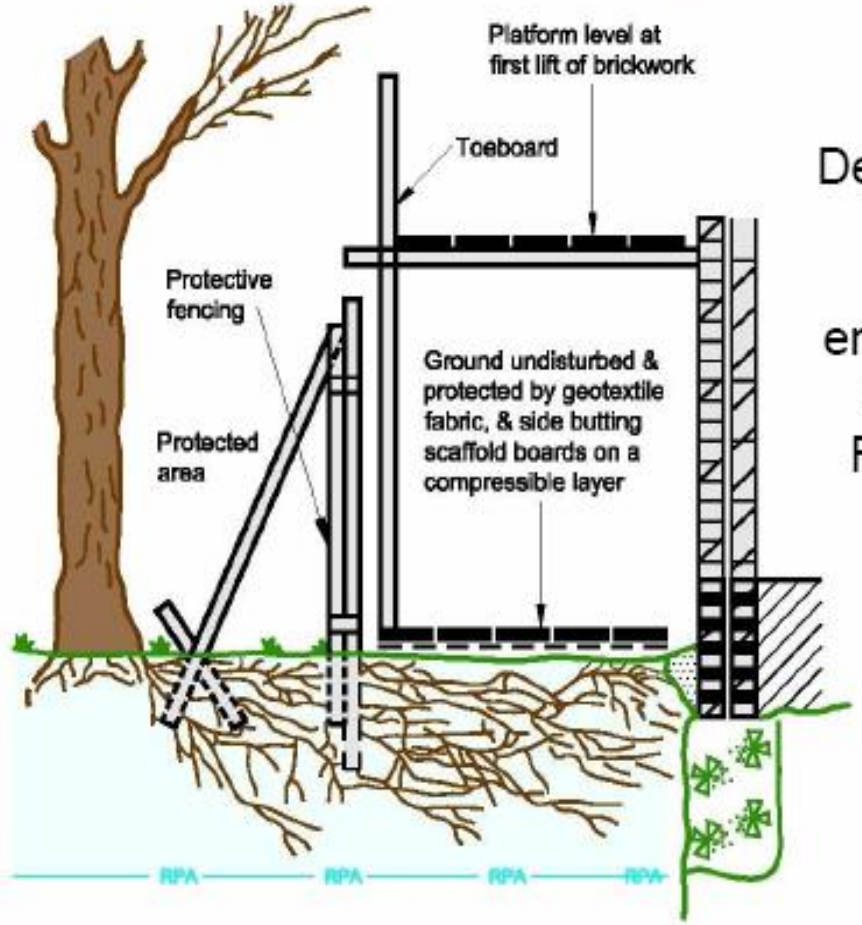
b) Stabilizer strut mounted on block tray

5. Figure 4 Detail of protective barrier where construction encroaches within BS5837:2012 Root Protection Area



Appendix No 2.1

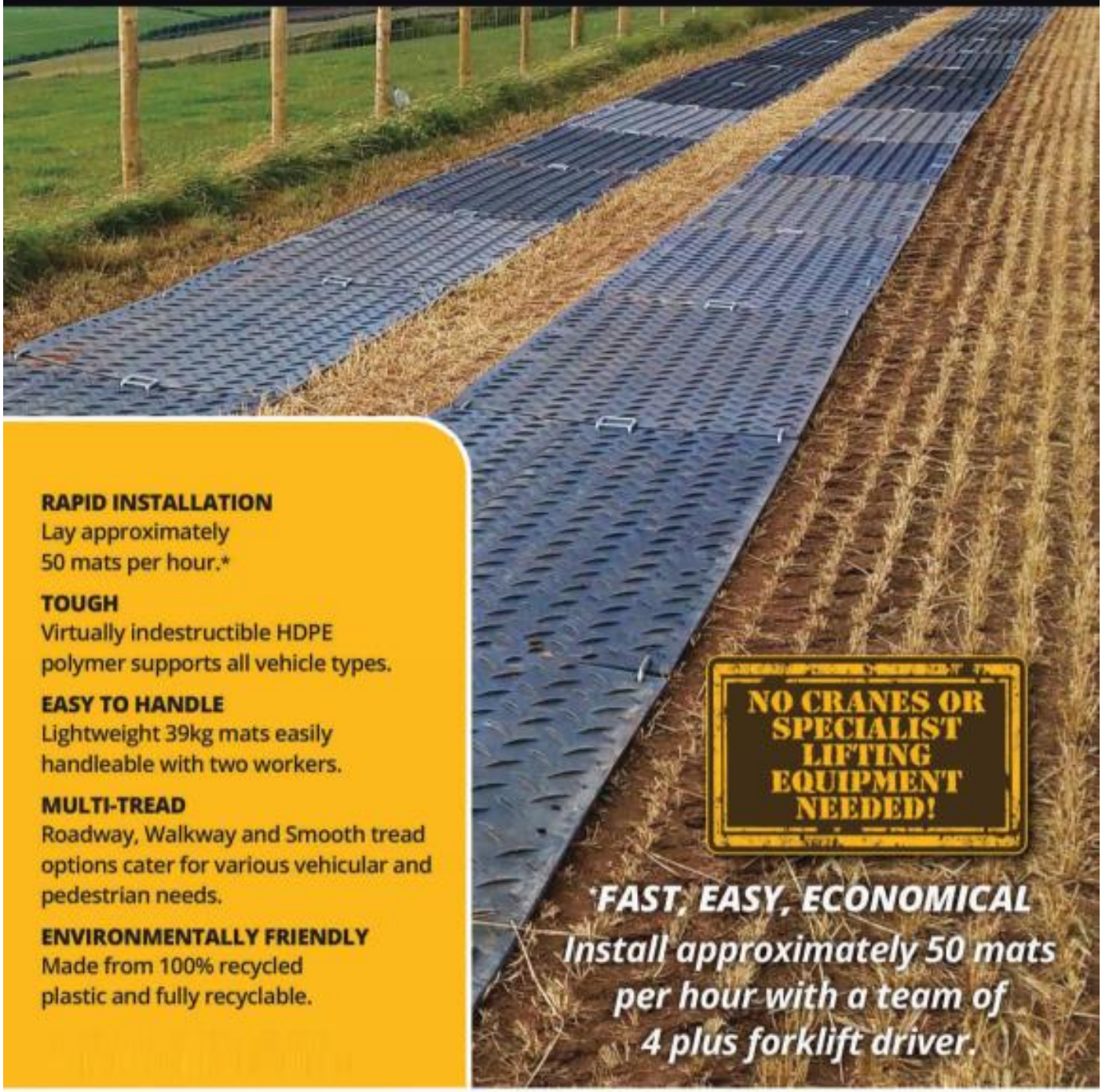
Figure 4 –



Detail of protective barrier where construction encroaches within BS 5837:2012 Root Protection Area (RPA)

6. GroundGuards Multitrack Ground Protection

MultiTrack



RAPID INSTALLATION
Lay approximately 50 mats per hour.*

TOUGH
Virtually indestructible HDPE polymer supports all vehicle types.

EASY TO HANDLE
Lightweight 39kg mats easily handleable with two workers.

MULTI-TREAD
Roadway, Walkway and Smooth tread options cater for various vehicular and pedestrian needs.

ENVIRONMENTALLY FRIENDLY
Made from 100% recycled plastic and fully recyclable.

GroundGuards®

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info@ground-guards.co.uk
www.ground-guards.co.uk

MultiTrack

MultiTrack mats are the strongest in their category

Mats are easily moved using a HandiHook

Standard no-tools joiners quickly clip the mats together

Low profile joiners for walkways plus bolted joiners

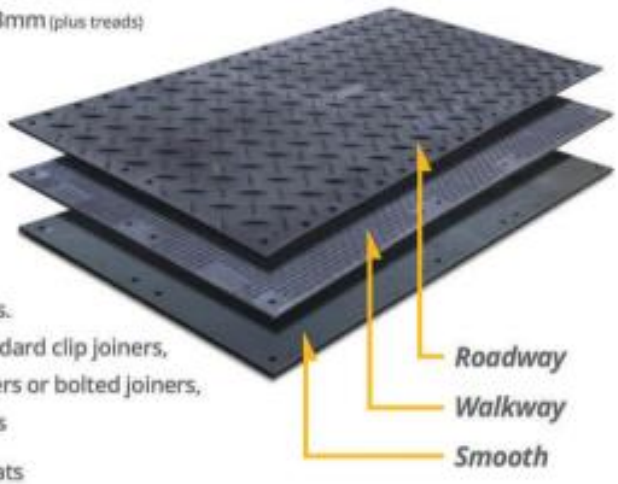
SafeStore stillages hold 25 mats

Overall Size: 2435 x 1215 x 13mm (plus treads)

Surface Area: 2.95m²

Weight: 39kg

Tread Options: Roadway, Walkway and Smooth, or a combination



Connectors: 10 joining points. A choice of standard clip joiners, low profile joiners or bolted joiners, plus anchor pins

Packed in: Stillage of 25 mats

Stillage Pack: **Weight:** 1105kg
Dimensions: 2550 x 1260 x 900mm

Slip Testing: BS7976 part 2

Deflection: Tested on varying CBR ground conditions using a 300mm diameter steel platen with 6 tonnes load to simulate the pressure of an HGV wheel

Ground CBR 11.35% : Deflection 17.68mm

Ground CBR 8.58% : Deflection 20.41mm

Ground CBR 4% : Deflection 22.00mm

Guarantee:

It is the user's responsibility to assess the load-bearing capacity of the ground, and to only operate vehicles within the weight that the ground is capable of safely supporting. Ground-Guards Ltd accepts no liability whatsoever for any damage, loss or injury arising from the ground conditions on which these products are used.

MultiTrack mats are not suitable to use for bridging purposes. Damage caused by mechanical equipment (e.g. cuts by digger buckets) or sharp protrusions beneath the mats is not covered by this guarantee.

GroundGuards®

+44 (0)113 267 6000
info@ground-guards.co.uk
www.ground-guards.co.uk

7. Air Spade/Air Excavation Specification

AIRSPADE®

PNEUMATIC SOIL EXCAVATION

AIRSPADE 2000

AIR EXCAVATION TOOL

EXCAVATION USING THE POWER OF COMPRESSED AIR

Soil is an unconsolidated assemblage of solid particles including clay, sand, and rock and sometimes organic matter. Voids between the particles are occupied by air and/or water. When compressed air is directed into soil at close range, air enters the voids where it expands, thereby fracturing the soil. Stronger, non-porous materials such as metal or plastic pipes, cables, or even tree roots are unaffected.

PATENTED SUPERSONIC NOZZLE

AirSpade's patented supersonic nozzle turns compressed air into a high-speed, laser-like jet moving at twice the speed of sound – Mach 2. All of the energy and momentum of air moving at approximately 1,200 mph is focused into the soil – dislodging it in a fraction of a second.

UNFOCUSED AIR FLOW FROM IMPROPERLY DESIGNED NOZZLE

FOCUSED AIR FLOW FROM AIRSPADE SUPERSONIC NOZZLE

Air exiting from an improperly designed nozzle diffuses outward rapidly to 3 to 4 times the area versus the focused air-jet from the patented AirSpade supersonic nozzle. With AirSpade, the result is faster, safer, more efficient soil excavation.

AirSpade 2000 Arbor/Landscape Kit shown above.

AirSpade® 2000 Arbor/Landscape Kit includes:
- AirSpade® 2000 handle with universal "Chicago style" coupling
- 4 ft barrel with dirt shield and 150 scfm nozzle
- 45 degree angled adapter
- 10 ft x 1" ID lightweight air hose with universal "Chicago style" coupling
- Heavy duty locking storage case

AirSpade® 2000 Construction Kit includes:
- AirSpade® 2000 handle with universal "Chicago style" coupling
- 4 ft barrel with dirt shield and 150 scfm nozzle
- 3 ft extension and coupler
- 45 degree angled adapter
- 10 ft x 1" ID lightweight air hose with universal "Chicago style" coupling
- Heavy duty locking storage case

AirSpade® 2000 Trench Rescue Kit includes:
- AirSpade® 2000 handle with universal "Chicago style" coupling
- 4 ft barrel with dirt shield and 150 scfm nozzle
- 45 degree angled adapter
- 10 ft x 1" ID lightweight air hose with universal "Chicago style" coupling
- Additional 150 scfm nozzle
- Heavy duty locking storage case

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THE INDUSTRY STANDARD

Today, thousands of AirSpades® are in use in arboriculture, utility, construction, and industrial applications worldwide. AirSpade is the tool of choice due to its fast, easy and non-destructive method of excavation.

APPLICATIONS

Arboriculture / Horticulture

Since its earliest trials in 1998 at Gainsborough Farms, KY, the AirSpade has become the premier air tool for advanced tree care. Leading arborists worldwide have evaluated and found multiple uses for the AirSpade including:

• Aeration • Locating roots for utility line installation • Radial trenching • Root collar excavation
• Root damage investigation • Locating roots for pruning • Soil compaction reduction • Vertical mulching
• Transplanting / bare rooting • Checking adequacy of root structure before pruning

Utility / Construction

When dealing with sensitive pipes and cables that are often punctured or damaged by traditional backhoes, the AirSpade offers an easy, fast, and non-damaging way to locate and excavate the area around them. In addition, AirSpade can create new holes or trenches to lay pipe or cable, and can be used in many other industrial and utility applications, including:

• Utility locating and repair • Keyholing • Potholing for line location
• Crack, joint, and valve box cleaning • Roadwork

Trench Rescue

The December 2005 issue of Underground Focus Magazine reports, "Every year in the United States, trenching accidents account for more than 5,000 serious injuries and between 50 and 100 deaths." According to Lt. Dave Adler of the Addison, IL Fire Department, a leading teacher of trench rescue training and safety, "When a worker is buried in a cave-in, a critical time clock starts and AirSpade can be an effective tool for their rescue."

AirSpade with AirVac

Conventional excavation of hazardous materials can be slow and harmful. AirSpade, used in conjunction with the AirVac vacuum unit, makes environmental site remediation easy, fast and non-damaging. Capabilities include:

• Uncover buried waste containers without fear of puncture
• Excavate tight places inaccessible to conventional backhoes
• Remove material in carefully controlled layers

FREQUENTLY ASKED TECHNICAL QUESTIONS

IN WHAT TYPE OF SOIL WILL AIRSPADE® WORK?

Because of the focused air-jet generated from the supersonic nozzle, AirSpade works in most soils, including compacted soils, and hard clays. In general, AirSpade will not cut through rock. However, shales may be broken apart by AirSpade if the jet is directed between the laminations of the rock. Similarly, AirSpade will not dislodge hard frozen soil which tends to behave like pavement or concrete.

WHAT SIZE AIRSPADE NOZZLE SHOULD I USE?

This depends on the desired rate of soil excavation which is in turn dependent upon the air delivered from the AirSpade nozzle. Rates are summarized in the table below.

Soil Excavation Rates

Nozzle Size (scfm)	Soil Excavation Rates (cubic ft / min)
25	0.4 to 0.9
60	0.7 to 1.1
105	0.9 to 1.5
150	1.2 to 1.8
225	1.7 to 2.3

WHAT SIZE AIR HOSE DO I NEED FOR THE AIRSPADE?

Generally a 1" ID air supply hose is recommended for use with the AirSpade.

WILL HIGHER PRESSURE MAKE THE AIRSPADE WORK BETTER?

All AirSpade nozzles are developed to operate optimally at 90 psig. Supplying higher pressure to a supersonic nozzle that has been optimized for 90 psig actually defocuses the air jet, thus degrading performance while consuming more air. For example, doubling the air pressure to 180 psig increases the air jet force by only 10%.

WHAT SIZE AIR COMPRESSOR DO I NEED TO USE THE AIRSPADE PROPERLY?

Portable air compressors have model numbers that are normally sized by the approximate air delivery in standard cubic feet per minute (scfm) at a gauge delivery pressure of 100 pounds per square inch (psig). For example, a 185 compressor will deliver 185 scfm at 100 psig. All AirSpade nozzles are rated at 90 psig and are designated by their air delivery at this pressure. Five nozzles are available to cover the size range of most portable air compressors. To size an AirSpade nozzle to a compressor simply ensure the compressor size is larger than the nozzle size.

The below table lists the minimum portable air compressor size needed to properly run a given AirSpade nozzle.

Recommended Compressor Size

Nozzle Size (scfm)	Minimum Compressor Size (scfm @ 100 psig)
25	25
60	60
105	125
150	175
225	250

HOW SHOULD I DIG WITH THE AIRSPADE?

Each pass of the AirSpade dislodges material up to several inches deep in a medium to stiff soil. Unless the soil is highly compacted, dwelling on the same spot is unnecessary and tends to increase spray. Ideally, the AirSpade should be moved laterally at a rate of about 1 to 2 feet per second. When several inches of soil have been loosened, soil should be physically removed to expose a fresh working surface for the nozzle. Vacuum suction, as provided by the AirVac® vacuum unit, is an excellent way to remove loosened soil.

Always wear eye and ear protection when operating air tools and related equipment.

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Appendix H

Statement of Supervision

NB. Items designated ?? cannot be entered until after approval is granted, but are to remain in the document to show where updates are required. This document to be reissued prior to any works commencing onsite with this text to be deleted from final document.

139 Petersham Road, Richmond, London

Statement of Supervision (Arboriculture)

Introduction

In accordance with Planning Permission ref: ?? (dated ??/??/????), David Salisbury Joinery Ltd are undertaking the development of the above site.

The purpose of this document is to ensure that all works that have an impact on retained trees are undertaken in accordance with the approved Method Statement and Tree Protection Plan. As such, the purpose of the Statement is to identify the following arboricultural issues:

- Approved documents
- Key staff and contacts
- Critical phases of pre-commencement, induction and construction

Approved Documents

The following documents must be available to all those with responsibility for arboricultural matters during construction:

- BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- Notice of Planning Decision ??, dated ??/??/????.
- Arboricultural Method Statement & Tree Protection Plan for this project – produced by Hayden's Arboricultural Consultants, ref: 11119 dated 14/08/2024.

Key Staff

The following have or are to be appointed responsible for arboricultural matters at the site:

- Developer: David Salisbury Joinery Ltd
- Arboricultural Consultant: Hayden's Arboricultural Consultants Ltd. Contact Nick Hayden (Arboricultural Manager) – 07843 247585, nick@treesurveys.co.uk
- Site Manager/Agent – TBC

Critical phases of pre-commencement, induction, construction & completion

REF*	ACTIVITY	ONE OFF /REPEAT	ATTENDEES	ACTION
1	Pre-commencement meeting (to discuss working methods, timescales and tree protection schemes)	One off	Developer, Arboricultural Consultant, Site Manager, Ground Works Contractor, Tree Officer	Arboricultural Consultant to record minutes – copies to be submitted to attendees
2	Inspection of completed tree work as per section 4.11 of AMS ref. 11119	One off	Arboricultural Consultant, Site Manager	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer
3 & 4	Inspection of fencing and ground protection as per section 4.6 of AMS ref. 11119	One off (for each identified item)	Arboricultural Consultant, Site Manager	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer
6	Inspection of specific tasks during construction – root pruning as per items 4.4.1 and 4.10.1 of AMS ref. 11119	One off (for each identified item)	Arboricultural Consultant, Site Manager,	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer
8	Completion of construction – prior to removal of fencing	One off	Arboricultural Consultant, Site Manager	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer
9	Final tree assessment – after fencing removal	One off	Arboricultural Consultant, Site Manager, Tree Officer	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer
	Additional inspections (if necessary) to ensure periods not greater than three months elapse between any of above listed monitoring events	Dependent on progress of the project	Arboricultural Consultant, Site Manager	Arboricultural Consultant to record minutes – copies to be submitted to Developer and Tree Officer

*REF numbers correlate with the Method Statement Flow Chart shown on drawing no. 11119-D-AMS

Variations and Incidents

Any proposed variations to the proposed working method (relating to arboricultural matters) will be referred by the on-Site Manger/Agent to the Developer who will seek advice from the Arboricultural Consultant. The Arboricultural Consultant shall advise on minor amendments (e.g. realignment of fencing etc) and will subsequently report these to the LPA Tree Officer by email or minutes. Issues directly relating to tree surgery or tree retention will be forwarded by the Arboricultural Consultant (with recommendations) to the LPA Tree Officer for approval. Except in an emergency and when the LPA Tree Officer is unavailable, no such actions will occur without the written approval of the LPA Tree Officer.

Nick Hayden
Arboricultural Manager (South Office) - Hayden's Arboricultural Consultants Ltd

14th August 2024

Appendix I

Drawing

- Arboricultural Impact Assessments
- Arboricultural Method Statements
- Tree Constraints Plans
- Arboricultural Feasibility Studies
- Shade Analysis
- Picus Tomography
- Arboricultural Consultancy for Local Planning Authority
- Quantified Tree Risk Assessment
- Health & Safety Audits for Tree Stocks
- Tree Stock Survey and Management
- Mortgage and Insurance Reports
- Subsidence Reports
- Woodland Management Plans
- Project Management
- Ecological Surveys