# Tree Survey, Arboricultural Impact Assessment

Preliminary Arboricultural Method Statement & Tree Protection Plan

In Accordance with BS 5837:2012

<table>
<thead>
<tr>
<th>Proj. No</th>
<th>3188</th>
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<tr>
<td>14 Kensington Square, London, W8 5HH</td>
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<tr>
<th>Client:</th>
<th>Stamos Yeoh Architects</th>
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<tr>
<td>Date of Report:</td>
<td>09/05/2013</td>
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<td>Revision:</td>
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Summary

The purpose of this report is to provide a preliminary consideration of the arboricultural implications created by 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 construct a subterranean room in the rear garden of 14 Kensington Square, London. As a result five individual trees were inspected. The arboricultural related implications of the proposal are as follows:

1. Implications on Construction – Given the restricted nature of the site it will be necessary to use contiguous piling or similar to construct the retaining walls for the proposed development.

2. Cultural Implications for Retained Trees – Linear root pruning is proposed in the limited areas where the proposed development encroaches within the RPA of trees to be retained. Root investigation has proven that the impact of root pruning will be minimal. Minor access facilitation pruning is required over the site to allow unhindered access below trees to be retained.

3. Landscape Implications – One small tree is to be removed to allow development and one small tree is to be removed irrespective of development. Given this the implication of the proposed development on the site and surrounding landscape is negligible.

4. Post Development Implications – Given the nature of the development no tree related post development implications are envisaged.

5. Post Planning Permission – Subject to achieving Planning Permission, a detailed Arboricultural Method Statement and Tree Protection Plan will be required. This will include the following: fencing type, ground protection measures, temporary load-bearing surfaces, service details, specialist construction details, access facilitation pruning specification, project phasing and an extensive auditable monitoring schedule.

Given the above, there are no overt or overwhelming arboricultural constraints that can be reasonably cited to preclude the proposed construction.
# Contact Details

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<tr>
<th>Client – Stamos Yeoh Architects</th>
<th>Contact details</th>
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<tr>
<th>Local Planning Authority – Royal Borough of Kensington &amp; Chelsea Co</th>
<th>Contact details</th>
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<tr>
<td><strong>Address</strong>&lt;br&gt;Planning &amp; Conservation&lt;br&gt;3&lt;sup&gt;rd&lt;/sup&gt; Floor&lt;br&gt;The Town Hall&lt;br&gt;Horton Street&lt;br&gt;London&lt;br&gt;W8 7NX</td>
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<th>Arboricultural Consultant – Hayden’s Arboricultural Consultants Limited</th>
<th>Contact details</th>
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1.0 Introduction

1.1 Terms of Reference

1.1.1 Hayden's Arboricultural Consultants Limited has been commissioned by Stamos Yeoh Architects to prepare a Tree Survey, Arboricultural Impact Assessment, Preliminary Arboricultural Method Statement and Preliminary Tree Protection Plan for the existing trees at 14 Kensington Square, London, W8 5HH.

1.1.2 The site survey was carried out on the 15th August 2012. The relevant qualitative tree data was recorded in order 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;

- Proposed site layout – Stamos Yeoh Architects drawing 1278/PA/500/B
2.0 The Site

2.1 Site Description

2.1.1 The site is the rear garden of 14 Kensington Square and comprises a split level garden with a number of small trees and one large horse Chestnut within the garden. There are two trees that have been surveyed that overhang the garden form adjacent land, the most prominent a large lime tree at the end of Ansdell Terrace.

2.1.2 The site is bordered to the north by Kensington Square to the east by adjacent properties and Ansdell Terrace, to the south by properties and gardens on Ansdell Terrace and to the west by adjacent residential gardens of properties on Kensington Square.

2.1.3 As previously stated the topography of the site is varied due to a 'terrace' at the rear of the garden splitting it in two. The Lime tree T005 stands on land above the level of the garden.

2.2 Soils

2.2.1 The soils 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 approx 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 The site is located within a locality specifically identified by Royal Borough of Kensington & Chelsea Co District 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 the owners, managers or any persons wishing to undertake work on trees sited within a Conservation Area is to require them to submit 6 weeks written notice detailing the surgery or felling they plan to undertake. No work may be carried during the 6 week period unless written permission has been received from Royal Borough of Kensington & Chelsea Co District Council. The local Planning authority can only prevent works notified to them within the 6 week period by serving a Tree Preservation Order. If this happens, the owner of the tree has a right to object to the serving of the order.

There are certain circumstances where written permission from the local planning authority may not be necessary before undertaking works. These include;

- Making a tree safe if it is an imminent threat to people or property.
- Removing dead wood, 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.

Owners, managers or any persons wishing to undertake work as an exemption to the written notification process are required to provide the local planning authority 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 local authority Tree Officer prior to carrying out such operations. Furthermore, and even in the event of an emergency situation, there is still a duty to notify the local planning authority 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.

3.0 Tree Survey

3.1 As part of this survey a total of five trees have been identified and these have been numbered T001 – T005.

3.2 A topographical survey was provided which showed the position of the trees on site. It should be noted however that topographical surveys are not always comprehensive and sometimes it is considered appropriate to record details of trees and landscape features omitted from or beyond the scope of the plan. If this circumstance occurs, the location of the individual tree or landscape feature is estimated.

3.3 In order 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 BS 5837:2012 “Trees in Relation to Design, Demolition and Construction - Recommendations”. For further information, please see the attached Explanatory Notes.

3.4 There are no BS 5837:2012 Category “A” (features of high quality) specimens or landscape features within the confines of the survey.

3.5 There are two BS 5837:2012 Category “B” (features of modest quality) trees on or associated with the site – T001 and T005.

3.6 There are two BS 5837:2012 Category “C” (low quality or young/small features) individual specimens and landscape features on site – T002 and T004. Items in this category may include trees of poor form, or specimens with no significant individual long term landscape or amenity value, but which in certain circumstances visually coalesce to provide pleasing softening, screening and habitat benefits.

3.7 T003 is a BS 5837:2012 Category “U” specimen (unsuitable for retention). This item requires felling for health and safety, cultural, or structural reasons, irrespective of the future use of the site.

3.8 The distribution of BS 5837:2012 specimens and landscape features by category is as shown in the chart below:
3.9 The mix of species present on site at the time of inspection is shown in the chart below. By necessity, this only includes individual specimens and groups, as species numbers within areas are not usually counted.

### Species Mix

- Cherry (*Prunus Avium*)
- Horse Chestnut
- Lime
- Magnolia grandiflora
- Varigated Pittosporum

3.10 In accordance with item 4.2.4 (c) of BS 5837:2012, the items 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.

3.11 Details of all proposed tree works together with priorities are given on the attached Schedule of Trees and Schedules of Works.
4.0 Arboricultural Impact Assessment

4.1 The Proposal

4.1.1 The proposal is to construct a subterranean room within the rear garden.

4.2 Access

4.2.1 Site access for construction is not straightforward. Equipment and materials can either be craned into the site, or a second alternative will be to demolish a section of boundary wall to the east of the site. Removal of spoil could be accomplished by the use of a conveyor belt. At present however, the method of access and working is yet to be confirmed.

4.2.2 The working area is encumbered by the Root Protection Areas (RPA) of two trees to be retained – T001 and T005. Therefore, and from a purely arboricultural perspective, it will be necessary to install a proprietary temporary load bearing surface to prevent compaction and contamination damage to tree roots. This must be installed as a first stage of development, immediately after the completion of the necessary tree surgery as shown on drawing no. 3188-D-A.

4.3 Demolition

4.3.1 No demolition is required as part of the proposed development.

4.4 Construction

4.4.1 The proposed subterranean room will require limited excavation within the RPA of T001, T004 and T005 amounting to a loss of 4.3% of the calculated RPA of T001 and 5.34% of the calculated RPA of T005. A root investigation undertaken on 16.04.2013 shows that root incursion within the site is low with minimal rooting discovered for any of the specimens to be retained. Photographic evidence is supplied on drawing number 3188-D-1. The largest root masses found are attributed to T002 which is to be removed to allow for development. No roots above 45mm diameter were found and furthermore the investigation revealed that the roots of T005 are decayed within the footprint of proposed construction and are believed to be infected with Honey Fungus. The proposed excavation will, in my opinion have a limited detrimental effect on the health of the trees involved. Given the minimal extent of the encroachment it is proposed that linear root pruning should be undertaken by a suitably experienced arboricultural contractor to prevent any unnecessary pulling or tearing of the roots during the installation of the contiguous piles which will support the newly created change of level.

4.4.2 As stated above a temporary load bearing surface will be installed during the construction phase of any permitted development. Should the client wish to replace the existing hard surface as part of a landscaping scheme post development, then any such hard surfacing and associated sub-base will not involve excavation below the top of the existing sub-base.

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 Barrier Fencing

4.6.1 Prior to the commencement of construction and immediately after the completion of the necessary tree surgery and felling work, protective fencing will be erected on site. This must be fit for purpose (including any ground protection if necessary) in full accordance with the requirements of BS 5837:2012 and positioned as shown on the attached Preliminary Arboricultural Implication Assessment & Tree Protection drawing. Full details of fencing will be supplied by Hayden’s Arboricultural Consultants in the detailed Arboricultural Method Statement & Tree Protection Plan.

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 complex aspects that affect tree protection (e.g. – but not exclusively – access, movement of materials and the installation of services). For this reason the project must be carefully phased to ensure the highest level of protection for retained trees at all times. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden’s Arboricultural Consultants will produce an in depth phasing recommendation to cover the major operations on site as they affect retained trees.

4.9 Monitoring

4.9.1 In accordance with item 6.3 of BS 5837:2012, 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. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden’s Arboricultural Consultants will produce an extensive auditable monitoring schedule to assess the progress of key site events/activities.

4.10 Cultural Implications for Retained Trees

4.10.1 It is necessary to undertake access facilitation pruning (AFP) which includes below ground works to T001, above and below ground works to T004 and T005 as outlined in the Schedule of Works to Allow Development. These works are necessary to permit construction access and provide appropriate working space etc. Given the amount of pruning necessary and the locations of the works, the AFP is not considered likely to have a significantly adverse effect on the trees and landscape features concerned. As part of the detailed Arboricultural Method Statement & Tree Protection Plan, Hayden’s Arboricultural Consultants will produce an in depth AFP specification.

4.10.2 Other works to retained trees (not relating to development) are listed on the attached Schedule of Works – Irrespective of Development.

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:-
### Table: Feature Reason for Removal BS Category* Visual Amenity Assessment*

<table>
<thead>
<tr>
<th>Feature No</th>
<th>Reason for Removal</th>
<th>BS Category*</th>
<th>Visual Amenity Assessment*</th>
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<tbody>
<tr>
<td>T002</td>
<td>The RPA conflicts with the footprint of the proposed development.</td>
<td>C</td>
<td>Tree with moderate visual amenity within the rear garden of 14 Kensington Square.</td>
</tr>
<tr>
<td>T003</td>
<td>The RPA conflicts with the footprint of the proposed development.</td>
<td>U</td>
<td>Tree with moderate visual amenity within the rear garden of 14 Kensington Square. Not visible outside garden.</td>
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*Please see definitions in the Explanatory Notes attached to this report.*

4.11.2 Other trees and landscape features are scheduled for removal - specifically T003. This is a poor quality specimen identified as BS 5837:2012 Category “U” and whose work requirements are appropriate on safety, cultural or structural grounds irrespective of any projected layout. In this particular circumstance the recommendation to fell T003 coincides with the requirements necessary to achieve the layout as detailed at item 4.1.1 above.

4.11.3 Given the limited size of these trees within the rear garden of No 14 Kensington Square and the limited public visual amenity they afford, it is my opinion that their loss will not have a overriding detrimental effect on the visual amenity of the site or surrounding area.

4.12 **Post Development Implications**

4.12.1 The design of the development, together with the orientation of the site is such that matters involving retained trees (e.g. shading, privacy, screening, direct damage or future pressure for removal) are not considered to be significant issues.

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. Because of this it is recommended that all trees on or adjacent to the site be inspected on an annual basis.

5.0 **Preliminary 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 erected in the positions indicated on the attached Preliminary Arboricultural Implication Assessment & Tree Protection drawing no. 3188-D-A. This fencing will be in accordance with the requirements of BS 5837:2012 including any necessary ground protection.
5.1.2 All fencing provided for the safeguarding of trees will be erected prior to any demolition or development 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 Local Planning Authority.

5.1.3 Where footpaths, access drives, or parking bays are constructed within the RPA of retained trees, careful attention will be paid to the type of surface treatment used in these areas, details of which are given in item 5.8, below. If possible, these should be installed as a final phase of the project, thereby protecting the RPA throughout the major construction phase of the proposed development.

5.1.4 Where fencing is impractical, consideration must be given to other forms of effective above ground tree structure protection. An example of this would be a combination of Barksavers to secure the stems and a temporary load bearing surface to shield the ground.

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 Local Planning Authority 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 Local Planning Authority.

5.3 On Site Storage of Spoil and Building Materials

5.3.1 Whereas normally, prior to and during all construction works on site, no spoil or construction materials would be stored within the RPA of any tree on, or adjacent to the site, even if the proposed development is to be within the RPA, given the restricted nature of the site this will not be possible. Therefore it is proposed that a temporary load-bearing surface be installed as indicated on the attached drawing No. 3188-D-A to allow limited storage of spoil and materials prior to removal from site. This is to reduce to a minimum the compaction of the roots of the trees. Details of the RPA for each tree and proposed temporary load-bearing surface are indicated on the attached Preliminary Arboricultural Implication Assessment & Tree Protection drawing no. 3188-D-A. Any encroachment within this protected area will only be with the prior agreement of the Local Planning Authority Arboricultural Officer.

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 pipe-work 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 surgery works, once approved by the Local Planning Authority, will be carried out prior to any other site works. Once completed, the proposed protective fencing will be erected along the lines indicated above. 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 F-1).

5.5 Tree Surgery

5.5.1 All tree work will be agreed with the Local Planning Authority and will be carried out in line with BS 3998:2010 (Recommendations for Tree Works). An arboricultural contractor approved by the Local Planning Authority will carry out the work. Any alterations to the proposed schedule of works will be agreed with the Local Planning Authority prior to commencement of works.

5.6 Levels

5.6.1 Over and above the minor encroachment within the RPA of trees to be retained and associated proposed linear root pruning, no further alterations to soil levels within the RPA of retained trees are envisaged. However, if it is necessary for these to occur, appropriate measures must be taken to prevent or minimise any detrimental effects on the affected root systems as detailed in 5.6.2 and 5.6.3 below only following prior consent from the Local Planning Authority Arboricultural Officer

5.6.2 If it is necessary to excavate so close to trees that roots greater than 50mm diameter are likely to be encountered, particular care will be taken to avoid damage. Excavation in these areas will be undertaken by hand or using an air spade, avoiding any damage to the bark. The roots will be surrounded with sharp sand prior to the replacing of any soil or other material in the vicinity.

5.6.3 If it is necessary to raise levels, it is essential that adequate supplies of water and oxygen through the soil to the trees’ roots. Therefore, where necessary, a granular material will be used which will not inhibit gaseous diffusion. Possible options are no-fines gravel, cobbles or, Type 2 road-stone. All hard surfaces will be of suitable specification to allow such gaseous diffusion, e.g. brick pavers.

5.7 Services

5.7.1 At the time of writing this report, no details on proposed services were available. However, the following principles should be adhered to when planning for their installation.

5.7.2 It is proposed that all underground service runs will be placed outside the RPA of the trees on or adjacent to the site. Where it is not possible to do this, the proposed length infringing the RPA will be hand dug ‘broken trenches’ (NJUG 4 paragraph 4) to ensure the maximum protection of the trees’ roots. The trenches may also be excavated using an air spade, or trenchless technology can be employed if this methodology is considered appropriate by the relevant service company (thus allowing services to pass below and through the roots without the need for traditional excavation). If it is necessary to cut any small roots as part of any of these processes, they should to be severed in such a way as to ensure that the final wound is as small as possible and free from ragged, torn ends.
5.7.3 All routes for overhead services will aim to avoid the trees. Where this is not possible, any tree work will be agreed prior to commencement with the Local Planning Authority.

5.7.4 All service providers (Statutory Authorities) will be consulted prior to commencement of works with the aim of minimising the number of service runs on the site.

5.7.5 All service runs/trenches where they encroach within the RPA of retained trees will be agreed with the Local Planning Authority prior to commencement of works.

5.8 **Hard Surface Types & Construction within the Root Protection Area**

5.8.1 Whilst no additional footpaths or other hard surfaces within the RPA as calculated in accordance with BS 5837:2012, (item 4.6.1) are proposed, it will be necessary to install a temporary load-bearing surface over the majority of the site not affected by the proposed development in order to protect the roots of those trees to be retained. This surface will be similar to Greentek Ground Guards or Evetrakway, details of which are given in Appendices 1.5 & 1.6. Given the individual requirements of each site, it is essential that a specialist engineer is consulted to specify the construction detail. Where it is necessary to remove any existing hard surface, or lower the ground level within the RPA, this may expose roots. This operation must be undertaken by a suitable experienced arboricultural contractor using hand tools or an air spade. Any roots found should be treated with the greatest of care and surrounded by sharp sand to provide a level base.

5.8.2 Where it is shown that the construction of the boundary wall of the plant room encroaches within the RPA of the retained trees, the construction of the retaining walls will be designed in such a manner so as to minimise the detrimental affect of the construction on the tree’s roots, such as the use of contiguous piles. In these situations any excavations within the RPA of an affected tree will only be undertaken following exploration of the existing root system with an air spade and the necessary root pruning undertaken to allow excavation without unnecessary pulling and tearing of the roots to be retained. This will ensure minimal damage to tree roots where construction/piling is considered appropriate. Details of the piling rig required and any access facilitation pruning necessary to allow access must be undertaken before the commencement of works and only with prior consent of the Local Planning Authority.

5.8.3 If boundary fencing is to be erected within the RPA of retained trees, it is proposed that the fence posts will be secured by the use of “Met-Posts” or similar design in order to keep the disturbance and damage of the roots of the trees to a minimum.
5.9 Reporting and Monitoring Procedures

5.9.1 In accordance with item 6.3 of BS 5837:2012, 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 Local Planning Authority and appropriate action taken only with the prior permission of Stamos Yeoh Architects and the Local Planning Authority.
6.0 Conclusions

6.1 The site is 14 Kensington Square, London, W8 5HH. Within what is considered to be the influencing area of the site a total of five individual trees have been surveyed. These were found to be of mixed condition and age providing a variety of amenity benefits. It is proposed to construct a subterranean room within the curtilage of this plot.

6.2 It is concluded that the proposed development will not have a significant impact on the important trees associated with the site. The highest quality specimens present are two BS 5837:2012 Category “B” trees. They will both remain as an integral part of the proposed layout however following root investigation works it has been identified that T005 is infected by Honey Fungus and it is strongly recommended that the tree should be pollarded to preserve the contribution of the specimen to the locality, however as the tree is beyond the boundary of the site the need for these works should be communicated to the owner of the tree.

6.3 In addition to a tree which requires felling irrespective of development, it is necessary to fell one low quality/poor longevity tree in order to achieve the proposed layout. Additionally, one tree requires minor crown lifting and one tree located within the ownership of neighbouring land requires reduction to the boundary to permit unencumbered construction space.

6.4 One tree has been identified for removal irrespective of any development proposals. The removal of this item coincides with the requirements of the proposed layout.

6.5 The alignment of the subterranean room nominally intrudes within the RPA of three trees to be retained. As proven by the root investigation undertaken this has only minor influence on the RPA and as such it is considered appropriate to undertake linear root pruning at this location. Evidence for root investigation is supplied on drawing number 3188-D-1.

6.6 Where the alignments of structures do not encroach within the RPA of any trees that are to be retained, and as assessed in accordance with BS5837:2012, no specialist foundation designs or construction techniques will be required to prevent damage to tree roots. Specialist foundations may still be required for other reasons, including mitigating the influencing distance of tree roots, and as such expert advice should always be sought from a structural engineer.

6.7 The construction process will require the installation of a temporary load baring surface.

6.8 This report recommends that specialist advice is obtained by expert practitioners in other disciplines. Such input should always be sought prior to the submission of this report in support of a planning application in order 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) (and impact on neighbouring structures, item 4.1.7)

6.9 All trees and landscape features that are to remain as part of the development should suffer no structural damage provided that the findings with this report are complied with in full. This includes ensuring that protective fencing is erected as detailed at items 4.6 and 5.1, and that the work is sequenced as listed in items 4.4.2 and 4.4.3 of this report.
7.0 Recommendations

7.1 Given the above it is my opinion that the proposed development is achievable in arboricultural terms, without significant detriment to the health and visual amenity of the trees to be retained. However, given the restricted nature of the site this will require careful planning and considerable care and attention to the proposed arboricultural elements of the proposed development detailed above.

7.2 Subject to achieving Planning Permission, it is recommended that a detailed Arboricultural Method Statement & Tree Protection Plan should be provided. This will include the following: fencing type, ground protection measures, temporary load-bearing surfaces, service details, specialist construction details, access facilitation pruning specification, project phasing and an extensive auditable monitoring schedule.

7.3 Tree surgery 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.

7.4 The tree surgery works 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 surgery works, to which the proposed schedule of works has been altered or the tree has been requested to be retained by the Local Planning Authority, cannot be the responsibility of this practice.
8.0 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, but will become invalid if any building works are carried out upon the property, soil levels altered in any way close to the property, or tree work undertaken. It must also be appreciated that recommendations proposed within this report may be superseded by extreme weather, or any other unreasonably foreseeable events.

If alterations to the property or soil levels are carried out, or tree work undertaken, it is strongly recommended that a new tree inspection be carried out.

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 reasonable 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:

May 2013......................................................
For and on Behalf of Hayden’s Arboricultural Consultants Limited
9.0 References


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

Appendix A  Species List & Tree Problems
Appendix B  Schedule of Trees
Appendix C  Schedule of Works - Irrespective of Development
Appendix D  Preliminary Schedule of Works to Allow Development
Appendix E  Explanatory Notes
Appendix F  Advisory Information & Sample Specifications
   1. BS 5837:2012 Figure 1 - Flow Chart – Design and Construction & Tree Care
   2. European Protected Species and Woodland Operations Decision Key to aid planning of woodland operations and protecting EPS (v.1)
   3. BS 5837:2012 Figure 2 - Default specification for protective barrier
   4. BS 5837:2012 Figure 3 Examples of above-ground stabilizing systems
Appendix G  Drawing No 3188-D-A
Appendix A - Species List & Tree Problems

Species List:

<table>
<thead>
<tr>
<th>Species</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherry</td>
<td>Prunus Avium</td>
</tr>
<tr>
<td>Horse Chestnut</td>
<td>Aesculus x hippocastanum</td>
</tr>
<tr>
<td>Lime</td>
<td>Tilia vulgaris</td>
</tr>
<tr>
<td>Magnolia Grandiflora</td>
<td>Magnolia sp.</td>
</tr>
<tr>
<td>Variegated Pittosporum</td>
<td>Pittosporum tobira 'Variegata'</td>
</tr>
</tbody>
</table>

Tree Problems:

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Symptoms/Damage Type</th>
<th>Consequence</th>
<th>Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deadwood</td>
<td>This relates to dead branches in the crown of the tree. In the majority of 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.</td>
<td>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.</td>
<td>Detailed monitoring should be undertaken on those trees showing signs of excessive deadwood production to identify the underlying cause.</td>
</tr>
</tbody>
</table>

<p>| Epicormic growth          | 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. | 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. | 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. |
| Name: <strong>Honey Fungus</strong> (<em>Armillaria mellea</em>) |<br />
|------------------------------------------|---|
| <strong>Symptoms/Damage Type:</strong> | Symptoms of the disease are toadstools which appear between July and December but commonly disappear by October with the autumn frosts. The cap is up to 15cm diameter and yellowish or tawny in colour, the stalk is usually up to 15cm high with a thick whitish to yellow cottony ring and they occur in clusters on stumps, roots, trunk bases and occasionally higher up the stem. Affected wood is initially stained, and then a soft wet brown rot develops which eventually becomes fibrous, stringy and white, often mixed with flaky white material. The rot rarely develops more than 50cm above ground level and sometimes is virtually confined to the roots. There may be dark-zone lines in the wood surrounding the most badly affected parts and often flat white sheets of fungal mycelium growth and sometimes masses of blackish-brown strands develop beneath the bark. Black, rounded bootlace like strands (rhizomorphs) can often be found among the soil around affected plants. Despite the apparently distinct symptoms, the diagnosis of Honey fungus attack is not always easy. The toadstools are only present in the autumn and do not always occur then, even on badly diseased trees. The bootlace like strands are not always easy to detect in the soil and similar bodies may be formed by other fungi. |
| <strong>Consequence:</strong> | This is an extremely serious pathogen recorded on almost all woody plants and several herbaceous species causing decay of the roots and lower stem and eventual death. This renders trees and shrubs liable to windthrow or breakage. |
| <strong>Control Measures:</strong> | Treatment of the disease is extremely difficult. Once infected a tree cannot be cured of Honey fungus and the only effective procedure to limit its spread to others is the prompt removal of the diseased individual, together with its entire root system and as much as possible of the surrounding soil. Other methods such as trenches and other barriers together with the application of preparations based on phenolic emulsions can be used, but application must be done on an annual basis and cannot be relied upon at all times in all soil types. Future planting on the site should be of trees regarded to be sufficiently resistant to succeed on infected sites, such as Ash, Beech, Box, Douglas Fir, False Acacia, Hawthorn, Holly, Larch, Laurel, Lime, Silver Firs, Tree of Heaven and Yews. Recently experiments have been undertaken with natural controls including the use of other fungi to remove potential host deadwood from the environment however results are not yet conclusive. |</p>
<table>
<thead>
<tr>
<th>Name: <strong>Horse Chestnut Leaf Miner</strong> (<em>Cameria ohridella</em>)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptoms/Damage Type:</strong></td>
</tr>
<tr>
<td>The adult moth lays eggs on the underside of Horse Chestnut and occasionally Sycamore leaves. The eggs hatch into larva that burrow into the leaf and proceed to hollow out (or mine) the middle of the leaf between the upper and lower cuticles (skin like layers). This mining causes the leaf to appear translucent and, in characteristic heavy infestations, the tree is disfigured by being almost defoliated from mid to late summer onwards. The larvae survive through the winter in fallen leaves. They are in a dormant (diapause) state and emerge as adults in the spring to re-start the infestation process.</td>
</tr>
<tr>
<td><strong>Consequence:</strong></td>
</tr>
<tr>
<td>Although this damage appears devastating, European studies of trees that have been defoliated for several successive years found no long term impact on tree vitality.</td>
</tr>
<tr>
<td><strong>Control Measures:</strong></td>
</tr>
<tr>
<td>No effective control measures are currently available beyond raking up and destroying all fallen leaves. Research is being carried out into the possible introduction of a wasp that parasitizes the moth but this is at an early stage.</td>
</tr>
</tbody>
</table>
Appendix B

Schedule of Trees
<table>
<thead>
<tr>
<th>TreeNo</th>
<th>On site</th>
<th>Species</th>
<th>DBH Min Dist</th>
<th>Min Dist</th>
<th>Crown Base Lowest Branch Base</th>
<th>Visual</th>
<th>DBH</th>
<th>Height</th>
<th>Visual</th>
<th>Crown Spread</th>
<th>Crown Spread</th>
<th>Problems / Comments</th>
<th>BS Cat</th>
<th>Work Required (TS)</th>
<th>Priority (TS)</th>
<th>Work Required (AIA)</th>
<th>Priority (AIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T001</td>
<td>Yes</td>
<td>Horse Chestnut</td>
<td>650</td>
<td>14</td>
<td>High</td>
<td>High</td>
<td>7.8</td>
<td>3.5</td>
<td>SM</td>
<td>3</td>
<td>2</td>
<td>Semi-mature tree overhanging Ansdell Terrace, adjacent property and garden. Horse Chestnut Leaf Miner. Minor deadwood. Good condition.</td>
<td>B2</td>
<td>No works required.</td>
<td>3</td>
<td>Undertake limited linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
<tr>
<td>T002</td>
<td>Yes</td>
<td>Cherry</td>
<td>240</td>
<td>7</td>
<td>Moderate</td>
<td>Moderate</td>
<td>2.88</td>
<td>2</td>
<td>SM</td>
<td>3</td>
<td>3</td>
<td>Small tree leaning to east over garden. Sparse crown. Minor deadwood.</td>
<td>C2</td>
<td>No works required.</td>
<td>4</td>
<td>Fell to allow development.</td>
<td>0</td>
</tr>
<tr>
<td>T003</td>
<td>Yes</td>
<td>Variegated Pittosporum</td>
<td>120</td>
<td>7</td>
<td>Low</td>
<td>Low</td>
<td>1.44</td>
<td>1</td>
<td>SM</td>
<td>3</td>
<td>3</td>
<td>Small tree in rear garden, leaning to north east due to proximity of magnolia in adjacent garden.</td>
<td>U</td>
<td>Fell to ground level.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T004</td>
<td>No</td>
<td>Magnolia Grandiflora</td>
<td>300</td>
<td>9</td>
<td>Moderate</td>
<td>Moderate</td>
<td>40.7</td>
<td>S</td>
<td>E</td>
<td>2</td>
<td>1</td>
<td>Tree overhanging site from adjacent garden. Leaning to west. Good condition. Root distribution is likely to be limited by the sites boundary wall.</td>
<td>C2</td>
<td>No works required.</td>
<td>4</td>
<td>Reduce crown spread to site boundary and undertake precautionary linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
<tr>
<td>T005</td>
<td>No</td>
<td>Lime</td>
<td>680</td>
<td>19</td>
<td>High</td>
<td>High</td>
<td>8.16</td>
<td>1.5</td>
<td>M</td>
<td>7</td>
<td>2</td>
<td>Large tree overhanging the site from adjacent land. Positioned between wall and building. Pushing over boundary wall and clearly damaging adjacent building. Previously pollarded. Epicormic growth on limbs and adventitious growth on main stem. Root investigation has revealed the presence of Honey Fungus causing root decay which is likely to destabilise the tree in the near future.</td>
<td>B2</td>
<td>Crown lift to 3 metres over site and reduce limbs from building by 1.5 metres. Monitor for signs of decline in light of Honey Fungus. Tree could be re-pollarded at old pollard point to preserve longer term value - communicate findings to owner of the tree.</td>
<td>3</td>
<td>Crown lift to 3.5 metres over site and undertake limited linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix C

Schedule of Works - Irrespective of Development
<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Species</th>
<th>Work required</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>T001</td>
<td>Horse Chestnut</td>
<td>Reduce crown to give a 1.5 metre separation between limbs and adjacent property to prevent damage to fabric of dwelling by rubbing limbs.</td>
<td>3</td>
</tr>
<tr>
<td>T003</td>
<td>Variegated Pittosporum</td>
<td>Fell to ground level.</td>
<td>3</td>
</tr>
<tr>
<td>T005</td>
<td>Lime</td>
<td>Crown lift to 3 metres over site and reduce limbs away from building by 1.5 metres.</td>
<td>3</td>
</tr>
</tbody>
</table>
### Schedule of Enhanced Monitoring

14 Kensington Square, London,

Surveyed By: Daniel Gospel  
Surveyed: 15/08/2012  
Managed By: Stephen Hayden

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Species</th>
<th>Work required</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>T005</td>
<td>Lime</td>
<td>Monitor for signs of decline in light of Honey Fungus. Tree could be re-pollarded at old pollard point to preserve longer term value - communicate findings to owner of the tree.</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix D

Preliminary Schedule of Works to Allow Development
<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Species</th>
<th>Work required</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>T001</td>
<td>Horse Chestnut</td>
<td>Undertake limited linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
<tr>
<td>T002</td>
<td>Cherry</td>
<td>Fell to allow development.</td>
<td>0</td>
</tr>
<tr>
<td>T004</td>
<td>Magnolia Grandiflora</td>
<td>Reduce crown spread to site boundary and undertake precautionary linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
<tr>
<td>T005</td>
<td>Lime</td>
<td>Crown lift to 3.5 metres over site and undertake limited linear root pruning as shown in drawing no. 3188-D.</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix E

Explanatory Notes
Explanatory Notes

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
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 40 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
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
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.

V Veteran. An over-mature specimen, usually of high value due to either its age, size and/or ecological significance

D Dead.
<table>
<thead>
<tr>
<th><strong>Height</strong></th>
<th>Recorded in metres, measured from the base of the tree.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crown Base</strong></td>
<td>Recorded in metres, the distance from ground and aspect of the lowest branch material.</td>
</tr>
<tr>
<td><strong>Lowest Branch</strong></td>
<td>Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.</td>
</tr>
<tr>
<td><strong>Life Expectancy</strong></td>
<td>Relates to the prospective life expectancy of the tree and is given as 4 categories:</td>
</tr>
<tr>
<td></td>
<td>1 = 40 years+;</td>
</tr>
<tr>
<td></td>
<td>2 = 20 years+;</td>
</tr>
<tr>
<td></td>
<td>3 = 10 years+;</td>
</tr>
<tr>
<td></td>
<td>4 = less than 10 years.</td>
</tr>
<tr>
<td><strong>Crown Spread</strong></td>
<td>Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.</td>
</tr>
<tr>
<td><strong>Minimum Distance</strong></td>
<td>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).</td>
</tr>
<tr>
<td><strong>RPA</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Water Demand</strong></td>
<td>This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 “Building Near Trees”.</td>
</tr>
<tr>
<td><strong>Visual Amenity</strong></td>
<td>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:</td>
</tr>
<tr>
<td></td>
<td>Low = An inconsequential landscape feature.</td>
</tr>
<tr>
<td></td>
<td>Moderate = Of some note within the immediate vicinity, but not significant in the wider context.</td>
</tr>
<tr>
<td></td>
<td>High = Item of high visual importance.</td>
</tr>
<tr>
<td><strong>Problems/Comments</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Work Required (TS)</strong></td>
<td>Identifies the necessary tree work to mitigate anticipated problems and deal with existing problems identified in the “Problems/comments” category.</td>
</tr>
<tr>
<td><strong>Work Required (AIA)</strong></td>
<td>Identifies the tree work specifically necessary to allow a proposed development to proceed.</td>
</tr>
<tr>
<td>Priority</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>Urgent – works required immediately;</td>
</tr>
<tr>
<td>2</td>
<td>Works required within 6 months;</td>
</tr>
<tr>
<td>3</td>
<td>Works required within 1 year;</td>
</tr>
<tr>
<td>4</td>
<td>Re-inspect in 12 months,</td>
</tr>
<tr>
<td>0</td>
<td>Remedial works as part of implementation of planning consent.</td>
</tr>
</tbody>
</table>
### 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
Rachel Edwards

From: Liz Dunnett
Sent: 22 March 2013 09:29
To: Rachel Edwards
Subject: FW: 14 Kensington Square, London W8 5HH

From: Mark.Ritchie@rbkc.gov.uk [mailto:Mark.Ritchie@rbkc.gov.uk]
Sent: 17 August 2012 10:37
To: Liz Dunnett
Subject: FW: 14 Kensington Square, London W8 5HH

Hi

No TPOs but the address is CA,

Regards

Mark Ritchie
Assistant Planner  7361 2767

From: Liz Dunnett [mailto:LizDunnett@treesurveys.co.uk]
Sent: 16 August 2012 11:22
To: Trees
Subject: 14 Kensington Square, London W8 5HH

Dear Mr Ritchie

Could you please advise if the above mentioned address is covered by any TPO's or is within a conservation area?

Kind Regards

Liz Dunnett
Administrator

Please consider your environmental responsibility - think before you print!
The Royal Borough of Kensington and Chelsea.
This e-mail may contain information which is confidential, legally privileged and/or copyright protected. This e-mail is intended for the addressee only. If you receive this in error, please contact the sender and delete the material from your computer.

******************************************************************

22/03/2013
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.
European Protected Species and woodland operations
Decision tree to aid planning of woodland operations and protecting EPS (v.1)

The diagram below illustrates the questions that woodland managers and operators should consider when deciding whether they need to apply for an EPS licence.
It should be noted that the diagram presents a simplified overview of the decision-making process.

(1) Are any "European Protected Species" likely to be found in this site location and in this type of woodland or forest?
   - Any species of bat (any wood with old trees)
   - Dormouse (coppice with low growth or under-storey in southern England)
   - Otter (woodland adjoining many rivers in England)
   - Great crested newt (many long-established ponds) and natterjack toad (very few sites)
   - Sand lizard and smooth snake (sandy sites, Dorset/Surrey heaths and scattered coastal locations).

   YES
   NO

(2) Are they known or likely to be present in this particular wood?
   - Check the National Biodiversity Network (www.nbn.org.uk)
   - Seek advice from County Wildlife Trust or specialist organisation
   - Consult individual local naturalists/experts
   - Signs of their presence observed in the wood (e.g. bat roost holes or hazelnuts gnawed by dormice).

   YES
   NO

(3) Are the proposed operations or activities likely to involve ANY of the following:
   A) Capture, injure or kill a protected animal
   B) Cause a significant disturbance to a protected animal
   C) Take or destroy the eggs of a protected animal
   D) Damage or destroy a breeding site or resting place of one of the protected species?

   Note: If "Yes" to 3A, 3B or 3C then go to 4 below.
   If "Yes" to 3D only, then skip 4 and proceed directly to 6 below.

   YES
   NO

(4) Will any capture, injury, killing, disturbance or taking or destruction of eggs be "deliberate" i.e. is the harm indicated in 3A, 3B or 3C above intentional, or foreseen as a most likely result of carrying out the operation?

   YES
   NO

(5) Can the operations be modified to avoid committing an offence (i.e. 3D or deliberate 3A, 3B or 3C) by following good practice guidance for EPS such as:
   - Leaving some areas undisturbed and/or phasing the work
   - Avoiding the areas or trees in which EPS are likely to be concentrated
   - Doing the work at a particular time of year
   - Using a different machine or technique or route?

   YES
   NO

(6) Can you make an EPS licence application which satisfies the following 3 tests:
   - The purpose of the operation is to help deliver the Government's Biodiversity and/or Forestry Strategies and is therefore required by reason of overriding public interest
   - There is no satisfactory alternative, and
   - The operation will not adversely affect the conservation status of the EPS concerned?

   YES
   NO

The decision process above has been produced by the Forestry Commission and further information can be obtained from www.forestrv.gov.uk.
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
Appendix H

Hayden's 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

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