Arboricultural Site Assessment

of

41/42, Campden Hill Square, London W8 7JR.

on behalf of

E2 Architecture + Interiors

19th November 2014
Our Ref: DFCP 3371(Rev 01)
Callum Campbell  FdSc(Arb):TechArborA
Summary

An arboricultural survey has been carried out and this report prepared to inform the client on the potential impacts of a proposed basement at no.41 Campden Hill Square, London, W8 7JR. All trees that could be affected by the proposal or have an influence on it were inspected.

This report seeks to provide information in accordance with British Standard BS 5837:2012, Trees in relation to design, demolition and construction.

A single White mulberry tree located in the rear garden of no.42 Campden Hill Square is the subject of this report, and is the only tree within the immediate vicinity of the proposal that could be impacted. This tree is located within the Kensington Conservation Area.

It is considered that due to the trees relatively small size, the presence of physical root barriers in the form of foundations/existing basement walls, and the history of heavy reduction works to the trees crown that the proposed development is acceptable in arboricultural terms.
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1.0 Introduction

1.1 Instruction

DF Clark Bionomique Ltd was instructed on 23rd October 2014 by Jake Barrow of E2 Architecture + Interiors, to produce a report on the impacts to an adjacent tree from the proposed basement at no.41 Campden Hill Square, London W8 7JR.

It has been produced in accordance with the principles of British Standard BS 5837:2012, *Trees in relation to design, demolition and construction - Recommendations* (BS 5837) and includes the following information to accompany a planning application:

- details of significant trees including an assessment of condition using BS 5837 categorisation;
- an assessment of the impact of the proposal on trees and any wider impact that has on local amenity and any impact trees may have on the proposed development;
- a schedule of tree works to facilitate construction.

1.2 The proposal

A proposal has been put forward to construct a basement at no.41 Campden Hill Square.

1.3 Scope and purpose of this report

This report concerns trees on the site and those adjacent to the site which could be affected by any development. It is concerned with the impact the development may have on trees and the effect retained trees may have on the development.

1.4 Legal constraints

A search was undertaken on The Royal Borough of Kensington & Chelsea planning website which confirmed that the tree is not the subject of a tree preservation order (TPO). However, no 41/42 Campden Hill Square is within the Kensington conservation area (CA). The tree protection status is correct at the time of the report production on 7th November 2014 but can be subject to change. It is therefore the responsibility of any persons planning to undertake tree works to the tree that is the subject of this report, to undertake their own checks with the local planning authority prior to works commencing.

Under section 211 of the Town & Countryside Planning Act, there is a legal requirement to provide the local planning authority (LPA) with six weeks’ notice of any proposed tree works, including removal within a conservation area (CA).
The LPA have three options open to them:

- Allow six weeks to lapse, after which the proposed works may proceed.
- Notify the applicant before the end of the six weeks that they raise no objections to the proposed works, after the six weeks has elapsed the works may proceed.
- Make a tree preservation order (TPO), which requires the LPA to make a new application under the TPO regulations (this is the only way the LPA may object to the works detailed within the section 211 notification).

1.5 Other information included in this report

The following information is included in Appendix 1:

- documents and information provided;
- legal constraints and liabilities;
- survey methodology;
- contacts; and
- reference documents.
2.0 Site Visit and Observations

2.1 Site visit

A site visit was undertaken on 1st November 2014 by Callum Campbell. The weather was clear and bright with good visibility.

2.2 Site description

The site is part of an existing residential property on Campden Hill Square, within the Royal Borough of Kensington & Chelsea. The surrounding area comprises residential town houses and gardens just off the A402 Holland Park Avenue, London W8 7JR.

The topography of the site is generally level. The soil is understood to be slightly acid loamy on London clay. The presence of clay indicates that the soil is liable to compaction which is very damaging to trees and also that there is the potential for tree root related soil movement which must be considered in relation to building foundations.

The tree concerned is located in the back garden of no.42 Campden Hill Square, and is directly adjacent to the back exterior wall of no.41 Campden Hill Square.

2.3 The subject tree

A single White mulberry – *Morus alba* is the subject of this report and has been categorised as a ‘B’ grade tree in accordance with section 4.5 and table 1 of BS3837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’ (see Appendix 1).

The tree does not contribute significantly to the local amenity of the area as it is located behind a brick boundary wall surrounding the garden of no.42. The tree is approximately 5 m tall with only 50% being visible from the public highway directly adjacent.

The main stem of this tree is approximately 2 m away from the eastern exterior wall of no.41 Campden Hill Square and its root protection area will be impacted by the proposals.

Measurements taken of the trees stem diameter indicate that the trees corresponding root protection area (RPA) has a radius of 5.7m.
2.4 Comments on specific trees

Annotated photos providing further information on the physiological and structural condition of the tree.

**Left – Image 1.**

Looking to the north-west from the public highway outside no.42 Campden Hill Road. The tree is located to the rear of a residential garden with its crown in contact with the exterior wall of no.41 Campden Hill Square. The tree can clearly been seen outgrowing its location.

**Right – Image 2.**

Repeated past management to enable this tree to be retained in its location has resulted in poor pruning practice with flush cuts preventing wound occlusion, exposing the tree to increased risk of infection by decay pathogens.
Co-dominant stems

Left – Image 3.

The tree has co-dominant stems at ground level and has a pronounced lean to the north which is likely to be a phototropic response to grow out towards the available light.

Right – Image 4.

The northern stem has a ‘prop’ installed beneath (see image 2). It is not known if this is effective but re-growth from successive reduction works indicate that no movement has occurred in recent years. The crown mass is sufficient in volume to present a significant sail area in high winds.
Left – Image 5.

Showing previous pollard point and subsequent reduction of the pollard growth resulting in a dense compact crown.

Right – Image 6.

Showing close proximity to rear of no.41 Campden Hill Square restricting light into the property.
Left – Image 7.

Area of decay next to union on main limb over rear access gate to no.42.

Right – Image 8.

The same limb showing weighted extension growth over rear access gate to no.42 with an abruptly angled growth habit.
3.0 Arboricultural Impact Assessment

3.1 Summary of the impact on trees

Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in Root Protection Areas (RPAs)\(^1\) or through post development pressures to prune or remove.

Tree roots can be asphyxiated and die if the rooting zone becomes compacted and soil structure damaged which can easily occur, particularly on clay soils, even with the passage of light vehicles. At the design stage, disturbance within the RPA should be avoided. If unavoidable, (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

Construction of hard surfaces and other construction may be acceptable within RPAs providing specialist methods of design and construction are used. This will often result in the use of minimal or no-dig methods which result in higher finished levels which must be allowed for during design due to the effect on access thresholds and structure heights etc.

The ability of trees to tolerate some disturbance depends on individual circumstances including prevailing site conditions, tree species, age and condition and this will be assessed by the project arboriculturist.

Building lines should be at least 2m outside the RPA to allow for scaffolding and other build-ability issues and to allow for service runs and paths around the edges of buildings.

Protection measures, usually a combination of barriers and ground protection must be in place before any works, including site clearance, begin, and stay in place for as long as a risk of damage remains. The protection of trees must take account of the buildability of the proposal, including services, and ensure that all activities such as storage of materials, parking and the use of plant and vehicles can be accommodated outside of RPAs.

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1 Root Protection Area (RPA) - A layout design tool indicating the minimum area surrounding the tree that contains sufficient rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority. Assessed according to the recommendations set out in clause 4.6 of BS 5837. It is calculated by multiplying the radius squared by 3.142. Clause 4.6.2 of BS 5837 states that the RPA may be changed in shape, taking into account local site factors, species tolerance, condition and root morphology.
4.0 Conclusions

4.1 From an arboricultural perspective the tree is of moderate quality and value, although there are some minor defects that can be remediated by appropriate pruning. The tree has co-dominant stems at ground level and has been pollarded at approximately 3m, then subsequently reduced to enable the tree to be retained in its current location. Some of the older pruning works were not undertaken in accordance with best practice, and as a result there are large wounds on the main stems and limbs which have not occluded resulting in exposed sapwood. The northern stem is currently propped up with a rigid brace (see images 2 & 4).

4.2 The Royal Borough of Kensington & Chelsea has undertaken a partial review of their core planning strategy, and within this strategy a review of basements within the planning policy was carried out. Findings from root excavation case studies in the borough from 2012/2013 by the local authority identified a number of large structural roots over a metre deep from a mature tree some 3 metres away in both cases. As a result of these case studies the borough of Kensington and Chelsea does not support tunnelling beneath the root protection areas of trees to construct basements.

4.3 This tree is within the Kensington Conservation Area and is subject to statutory protection under Section 211 of the Town & Country Planning Act 1990, and as such any unauthorised works to the tree can result in criminal proceedings.

4.4 Due to the relatively small size of the tree and its confined location it is unlikely that any significant roots would be present beneath the foundations of the outside wall of no.41, with the foundations and existing basement wall to the east acting as a physical barrier to root spread. If the tree was of a different species and larger it may be reasonable to conclude that significant roots could be present as per the root excavation case studies discussed in paragraph 4.3.
5.0 Recommendations

5.1 As the mulberry tree is not comparable in size in relation to the trees discussed in the root excavation case studies (refer to paragraph 4.3), it would be reasonable to conclude that the spread of any tree roots would be limited by the foundations of the exterior wall, and the existing basement wall to the east.

5.2 With this in mind, the tree should be re-pollarded back to its original pollard points to divert the trees energy resources away from root development and further minimise the chance of any damage to the trees root system from the proposals.

Callum Campbell FdSc(Arb):TechArborA
Senior arboricultural consultant—DF Clark Bionomique Ltd

I have over 15 years' experience in arboriculture including 6 years as a forestry/arboricultural manager, 3 years as a Highways Tree Officer and 3 years in Arboricultural Consultancy.
Appendix 1
Survey and Background Information
1. **Methodology**

   The tree was surveyed from ground level without detailed investigations. All trees with a trunk diameter of 75mm or above\(^2\) were surveyed. All dimensions were estimated unless otherwise indicated. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS 5837 and includes species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C) to reflect its suitability as a material constraint on development.

2. **Documents and information received**

   - Proposed basement layout drawing no.4104-SM01/SM02 by E2 Architecture.

3. **Contacts**

<table>
<thead>
<tr>
<th>Name</th>
<th>Company/organisation &amp; position</th>
<th>Tel. no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jake Barrow</td>
<td>E2 Architecture &amp; Interiors</td>
<td>020 (7) 183 2285</td>
</tr>
<tr>
<td>Simon Evans</td>
<td>41 Campden Hill Square</td>
<td>07841 277781</td>
</tr>
</tbody>
</table>

4. **Reference documents**

   - *DETR Tree Preservation Orders – A Guide to the Law and Good Practice;*

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\(^2\) BS 5837 recommends that in most circumstances all trees over 75mm stem diameter should be included in a pre-planning land and tree survey.
5. Legal constraints and liabilities

Tree preservation orders: According to information received from the Royal Borough of Kensington & Chelsea planning website, the tree concerned is not the subject of a tree preservation order (TPO).

Conservation Areas: According to information received from the Royal Borough of Kensington & Chelsea the tree is within Kensington Conservation Area (CA) and is subject to statutory protection under the Town & Country Planning Act 1990.

Occupiers Liability 1957 and 1984: The Occupiers Liability Act places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore this report includes recommendations within the tree tables for work required for safety reasons. ‘Common sense risk management of trees (National Tree Safety Group 2012)’ states that ‘the owner of the land on which a tree stands, together with any party who has control over the tree’s management, owes a duty of care at common law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property.’

Common Law: This enables pruning back of the crown and roots of trees on adjacent land where they overhang neighbouring property, providing the work is reasonable and does not cause harm. This right does not override TPO and CA legislation.

Ecological constraints: The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees. These could impose significant constraints on the use and timing of access to the site. It is the responsibility of the main contractor and tree surgery contractor to ensure that no protected species are harmed whilst carrying out site clearance or tree surgery works. Unless competent to do so, the advice of an ecologist must be sought.
Appendix 2
Key to Tree Survey Sheet
Key to terms

T = Tree  G = Group  H = Hedge  S = Shrub mass

Age Class:

NP = Newly planted.
Y = Young - an establishing tree that could be easily transplanted.
SM = Semi-mature - an established tree still to reach its ultimate height and spread and with considerable growth potential.
EM = Early mature - a tree reaching its ultimate height and whose growth is slowing however it will still increase considerably in stem diameter and crown spread.
M = Mature - a tree with limited potential for further significant increase in size although likely to have a considerable safe useful life expectancy.
OM = Over mature - a senescent or moribund tree with a limited useful life expectancy.
V = Veteran - a tree older than typical for the species and of great ecological, cultural or aesthetic value.

Dia: Diameter of stem in millimetres at 1.5m above ground level for single-stemmed trees or in accordance with Annex C of BS 5837 for multi-stemmed trees or trees with low forks or irregular stems.

Ht: Height in metres.

Cr ht: Height of first significant branch above ground level and direction of growth.

NSEW: Crown spread at the four cardinal points

BS cat: Category in accordance with Table 1 and section 4.5 of BS 5837.
U - Unsuitable for retention. Existing condition is such that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. Note, category U trees can have existing or potential conservation value which it might be desirable to preserve.
A - High quality and value (non-fiscal) with at least 40 years remaining life expectancy.
B - Moderate quality and value with at least 20 years remaining life expectancy.
C - Low quality and value with at least 10 years remaining life expectancy, or young trees with a stem diameter below 150 mm.

A, B and C category trees are additionally graded into: 1) Mainly arboricultural values; 2) Mainly landscape values; 3) Mainly cultural values including conservation.
**Cond:** Physiological condition. G = good; F = fair; P = poor; D = dead.

**Life exp:** Estimated remaining contribution in years.

**RPR:** Root protection radius in metres based on stem diameter.

**RPA:** Root protection area. A layout design tool indicating the minimum area surrounding the tree that contains sufficient rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority. Assessed according to the recommendations set out in clause 4.6 of BS 5837. It is calculated by multiplying the radius squared by 3.142. Clause 4.6.2 of BS 5837 states that the RPA may be changed in shape, taking into account local site factors, species tolerance, condition and root morphology.

**CEZ:** Construction exclusion zone. An area based on the RPA in $m^2$ identified by an arboriculturist, to be protected during development, including site clearance, demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.
Appendix 3
Tree Survey Schedule
Appended Separately.
Appendix 4

Tree Work Recommendations
The decision of whether the tree in the garden of no.42 can be pruned will be determined by the LPA due to the trees conservation area status.

Tree Works

<table>
<thead>
<tr>
<th>Tree no.</th>
<th>Species</th>
<th>Proposed works</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>White mulberry</td>
<td>Re-pollard back to 3m.</td>
<td>To divert the trees resources away from root development.</td>
</tr>
</tbody>
</table>
Appendix 5
Specific Report Caveats
Specific Report Caveats

- The survey was based on information provided by the client.
- No internal diagnostic equipment was used other than a sounding mallet and probe.
- The survey is concerned solely with arboricultural issues.
- Any work with trees will discharge the due diligence requirements of all relevant wildlife and countryside legislation.
- Trees are dynamic living organisms whose health and condition can change rapidly. Any changes to the tree or conditions close to the tree may change the stability and condition of the tree and a further examination would be required and may affect the validity of this report.
- This report is valid for 12 months.

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