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Arboricultural Survey & Impact Assessment (BS5837:2012)

Site

12 Lyndhurst Gardens
London
NW3 5NR

Client

LBMV Architects
27 Elizabeth Mews
London
NW3 4UH

Date of Report:

24th April 2019

Report Reference:

AIA/MF/036/19

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1.0 Introduction

1.1 This report has been commissioned by LBMV Architects to survey, assess and provide an Arboricultural Impact Assessment for the 4 x trees sited at and within close proximity of proposed development works at 12 Lyndhurst Gardens, London, NW3 5NR.

1.2 A site visit was conducted on Friday 8th December 2017 to survey the trees at the front and rear of the property. The weather at the time of inspection was bright with cold temperatures. A report was prepared for Pre-App purposes with this report updating that information collated.

1.3 The tree survey, report and recommendations have been compiled for 4 x trees (T1-T4) surveyed within the site and adjacent property to east also. The details of the subject trees are set out in the tree survey table in *Appendix A*. The trees were surveyed on the date and time shown above and the tree survey assessment information for the tree describing size, condition and surroundings are found within this appendix.

1.4 The trees located within the site are shown in site plans T001-T003, *Appendix B*, and these correspond to the tree survey results table, *Appendix A*.

1.5 Photographs of the trees can also be found in *Appendix C*.

1.6 This report and the opinions within it have been produced by Marcus Foster, a qualified Arboriculturist with over 19 years experience and holding a National Diploma in Arboriculture, the Arboricultural Association's Technicians Certificate, Professional Tree Inspection Certificate (LANTRA) as well as a degree in History and Society. Work experience within the industry includes work as a Contracts Manager for an Arboricultural Association Approved Company, a Local Authority Tree Preservation Officer and an independent Arboricultural Consultant. As a consultant many of projects undertaken are in the inner London Boroughs of Islington, Hackney, Westminster, Camden, Southwark and RBKC, making Marcus Foster familiar with the most recent requirements of development and constraints on urban trees.

1.7 No additional documentation has been referred to relating to the tree or the building at this property for the compilation of this report.

2.0 Survey Details and Scope

2.1 The site survey included the 4 x trees (T1-T4) as shown in the survey, *Appendix A*, and also highlighted on the site plans, *Appendix B*.

2.2 The trees were surveyed from ground level from within the site. The diameter of the trunks have been measured using a DBH tape at 1.5m height. The height of the trees have been estimated.

2.3 The following information was recorded for the tree and is shown in the Tree Schedule included in *Appendix A*:

- Number: an identity number which cross-references locations shown on the plan in *Appendix A* with the schedule in *Appendix B*.
- Species: listed by common names
- Tree Height: height in metres (m)
- Tree Spread: spread in metres (m)
- Stem diameter: measured in millimetres (mm) and taken at 1.5m above ground level
- Age Class: Y (young); EM (early-mature); M (mature); OM (over-mature)
- Vigour: G (good); F (fair); P (poor); D (dead)
- Structural Condition: G (good); F (fair); P (poor); D (dead)
- General Condition Specific comments relating to each tree
- Estimated Remaining Contribution (years)
- BS5837 Category Grading
- Protection Distance m² Area (where applicable – BS5827: 2012)
- Protection Distance Radius (where applicable – BS5827: 2012)

2.4 Information recorded in the tree survey, *Appendix A* is expanded in the report findings and preliminary recommendations have been made in *Section 5*.

2.5 Findings as shown within *Appendix A* and discussed within *Section 4* are also highlighted within *Appendix B* which incorporates the Tree Constraints Plan (TCP) addressing areas where arboricultural solutions are required.

3.0 Survey Limitations

3.1 No soil excavations have been carried out.

3.2 This report only considers the trees and conditions at the time of inspection. As the inspection was only visual no guarantee can be given concerning the condition of the wood at present in any of the trees inspected and furthermore that no future problems or deficiencies may arise.

3.3 The survey has been undertaken as a survey of the trees without prior influence of the development and implicating factors.

3.4 No invasive tools were used during this site survey.

3.5 It should be noted that vegetation including shrubs within this / the neighbouring sites have not been included in the survey and report as there are none were deemed of relevance for the purposes of this report.

3.6 This report is preliminary and further investigations may be required in order to reach firm conclusions and/or further recommendations for action.

4.0 Tree Survey Summary

4.1 The trees have been surveyed in accordance with BS5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012) and have been rated as follows:

Category 'A' trees

Trees of high quality with an estimated remaining life expectancy of at least 40 years. Trees have been categorised as 'A' trees for one of the following reasons:

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'A' category trees have a **green** outline as denoted within the site plan key / survey.

N/A

Category 'B' trees

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Trees have been categorised as 'B' trees for one of the following reasons

- Mainly arboricultural qualities
- Mainly landscape qualities
- Mainly cultural values including conservation

Within the Site Plan (Appendix B) those trees rated as 'B' category trees have a **blue** outline as denoted within the site plan key.

T4

Category 'C' trees

Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Trees have been categorised as 'C' trees for one of the following reasons

- Arboricultural qualities - unremarkable trees of very limited merit
- Mainly landscape qualities
- Trees with no material conservation or cultural value

Within the Site Plan (Appendix B) those trees rated as 'C' category trees have a **grey** outline as denoted within the site plan key.

T1, T2 & T3

Category 'U' trees

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

Within the Site Plan (Appendix B) those trees rated as 'U' category trees have a **red** outline as denoted within the site plan key.

N/A

4.2 The trees have been surveyed taking into account condition, general health and form without the development process influencing the survey. In addition they have also been surveyed taking account of amenity value that is offered in relation to both the landscape and surrounding buildings and streetscape. This report outlines the impact that the proposed development will have on the overall treescape and landscape; it provides recommendations to ensure that long-term amenity value for the area is retained.

4.3 The report has been written with close reference to the British Standard Guidance, British Standard 5837: 2012 'Recommendations for trees in relation to construction' (BS5837: 2012), which addresses the juxtaposition between trees and structures. The Arboricultural Impact Assessment highlights areas where the trees will require protection which should be addressed within an Arboricultural Method Statement (AMS) specific to the site and proposed scheme. and corroborating with all construction and landscape method statements as relevant.

5.0 Findings and Discussion:

Site Overview

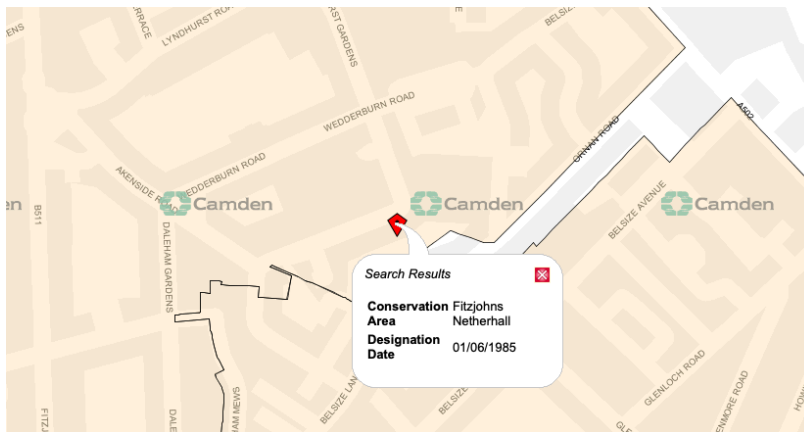
5.1 There are 4 x trees located within close proximity of the proposed development. The trees surveyed are located within the London Borough of Camden; the property is located within a Conservation Area and a Tree Preservation Order (TPO) also affects the site as highlighted below:

TPO Reference:

LB Camden - TPO Ref: Ash Tree - C60

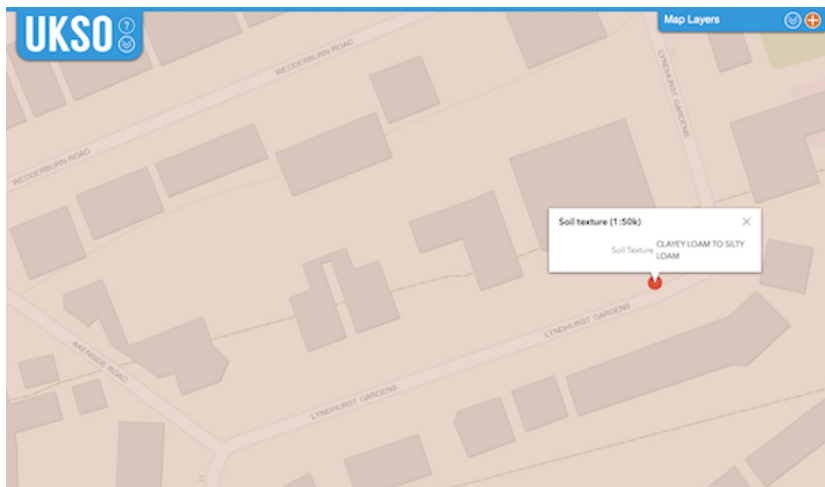
Conservation Area Reference:

Fitzjohns Conservation Area



Extract from LB Camden website - April 2019

5.2 The underlying soil to this area is classified as 'clayey loam to silty loam' within the UK Soil Observatory - www.ukso.org - a medium to heavy soil mix.



5.3 The property comprises a semi-detached building with a lower ground floor Flat where development is proposed. The front gardens are laid to soft and hard landscape with steep steps leading to the property. To the rear, the gardens are generally soft landscape with informal pathways and shrub / border garden features. A formal retaining wall provides a significant level change to the south.

5.4 For the purposes of this report, reference has been made to the following plans for the proposed development:

LBMV ARCHITECTS

Existing Drawings (06/02/18)

0066_A1000
0066_A1001
0066_A1002
0066_A1003
0066_A1004
0066_A1005
0066_A1006
0066_A1007

Proposed Drawings (06/02/18)

0066_A2000/REV4
0066_A2001/REV4
0066_A2002/REV4
0066_A2003/REV4
0066_A2004/REV4
0066_A2005/REV4
0066_A2006/REV4
0066_A2007/REV4
0066_A2008/REV4
0066_A2009/REV4
0066_A2010/REV4
0066_A2011/REV4

5.5 This report addresses the proposed development works and highlights where tree protection and mitigation measures are required to be outlined within an Arboricultural Method Statement (AMS).

5.6 Trees affect the proposed development site in 3 main ways:

5.6.1 Front garden tree close to public highway and general access within the site (T4)

5.6.2 Rear garden trees in close proximity of proposed development and associated construction works (T1 & T2)

5.6.3 Rear garden neighbouring tree in close proximity of proposed development (T3)

5.7 Therefore upon these trees the proposed development has the potential to affect the trees in the following ways

- Amendment to building footprint at rear of property
- Basement Excavations
- Construction site activities and infrastructure to front of property
- Rear landscape works
- Implementation of development works
- The use of and storage of materials and chemicals on site within close proximity of the trees
- The long-term impact of associated works of the proposed development

Tree Survey in Relation to Proposed Development

Tree T1

5.8 Tree T1 is a mature Ash tree located within the rear garden of the property. The tree appears generally structurally sound and is sited within very close proximity of both this and the neighbouring property. Accentuated buttress roots at the base give way to a straight main stem and a compact canopy shape cyclically crown reduced to compensate for urban setting and close proximity to no.s 12 & 14 Lyndhurst Gardens. The tree is also climber clad to 12m height

5.9 Within the rear garden the tree is sited as follows:

- 2.6m from existing property to the north
- 0.6m from boundary line with No. 14

5.10 The trees inappropriate location within the rear garden and against existing properties means that this tree is recommended for removal and should not be deemed a constraint for the development. The following is recommended in conjunction with the development:

- Tree removal of T1
- Mitigation replacement planting of a more appropriate species within more appropriate location
- Species and size of replacement planting with exact location to be outlined within AMS report

Tree T2

5.11 Tree T2 is a mature to over-mature Sycamore tree located within the rear garden of the property. The tree is in poor condition with a significant cavity at the base on the west side to 1.5m. The original pollard point is at 3m height and the tree is now reduced at 6-8m with works last carried out 2017. The tree has a very limited lifespan and the stem in current condition with approx 40% of the stem decayed is unlikely to support a developing crown beyond 2 years reduction

5.12 The tree's recommended root protection distances are 6.36m radius / 127.09m² total area. The proposed development at both ground floor and basement levels would impact upon the tree and therefore tree T2 is recommended for removal as its limited lifespan and compromised structural integrity means that an improved replacement planting within the upper or lower areas of this rear garden can provide replacement amenity value and canopy cover for the long term.

5.13 The following is recommended in conjunction with the development:

- Tree removal of T2
- Mitigation replacement planting of a more appropriate species within more appropriate location
- Species and size of replacement planting with exact location to be outlined within AMS report

Tree T3

5.14 Tree T3 is a mature Lime tree located within the rear garden of the neighbouring property 14 Lyndhurst Gardens. The tree appears generally structurally sound having viewed from No.12 rear garden only with a main union at 5m and reduction points at 5-10m height. The tree is cyclically crown reduced to these points and last works where last carried out approx 2 years ago.

5.15 The tree's recommended Root Protection Area (RPA) distances are as follows:

- 7.32m radius
- 168.36m² total area

For this tree a modified RPA has been applied as shown within drawing T003 - Tree Constraints Plan (TCP) based upon the following site features

- 1.6m height retaining wall directly adjacent
- Historic existence of tree T2 to north within site of proposed development
- Level changes from north to south downwards

5.16 The proposed development is not likely to impact this tree with retention of both the existing boundary wall and the retaining wall as currently exists. The development to the west of the tree encroaches within the RPA of tree T3 but the retaining wall at at least 1.6m height and directly adjacent will have retained roots either historically or with intervention during implementation of / formalisation of boundary. Any works encroaching within the retaining wall for the development process will require for tree protection as highlighted within an AMS. The tree's main stem shall remain protected by virtue of the location within the neighbouring property but root plate of conventional and modified RPA as applied shall require tree protection measures.

Tree T4

5.17 Tree T4 is sited at the front of the property and will not be directly affected by the proposed development. However site access for the construction site activities require for the main stem of this tree and existing hard landscape to be protected during all development works as should be outlined within an AMS.

Summary

5.18 The trees within this property, and neighbouring to the east also, will require protection where retained and mitigation measures where proposed for removal during the development process in order to retain the amenity value currently provided for the long term. The following is required:

- Tree removal and mitigation tree replacement planting for tree T1
- Tree removal and mitigation tree replacement planting for tree T2
- Tree protection measures for excavations within close proximity of tree T3 for entire development process
- Tree protection measures for construction site activities within close proximity of tree T4

5.19 The above protection methods and arboricultural solutions for implementation of the development should be highlighted within an Arboricultural Method Statement which should corroborate closely with structural engineering proposals and a construction method statement also. In summary these measures required are as follows:

ROOT & GROUND PROTECTION FOR EXCAVATION & DEVELOPMENT WORKS WITHIN RPA OF T3

The provision of the following shall be required within the AMS:

- Construction methodology to corroborate with AMS
- Precautionary Zone implemented to be hand dug excavations only
- Arboricultural Supervision Scheme

MAIN STEM PROTECTION FOR TREE T4

Tree protection measures to protect the main stem must be provided where fencing does not encompass full RPA recommended in the form of basal shuttering

7. Appendices

Appendix A

Tree survey (BS5837:2012)

12 Lyndhurst Gardens
London
NW3 5NR

Colour Key: BS5837: 2012 (see Section 2.6)

-  Category A
-  Category B
-  Category C
-  Category U

TREE SURVEY
12 Lyndhurst Gardens - BS 5837:2012 - 091217

| Tree No | Species | Height (m) | DBH (mm) | Spread (m) | Age | Visual Condition | Vigour | BS5837 Category Rating (2012) | Remaining Contribution. (years) | Comments / Structural Condition | RPA (total - m2) | RPA (radius - m) |
|---------|----------|------------|----------|-----------------------------|--------|------------------|--------|-------------------------------|---------------------------------|---|------------------|------------------|
| T1 | Ash | 12 | 520 | N: 2 E: 3 S: 2 W:3 | M | F | F | C.1 | 10 years + | Generally structurally sound at base with accentuated buttress roots. Straight main stem to 4m, not able to inspect main union. Heavily reduced in the past to 6-10m and last carried out 2-33 years ago. Canopy growing directly against building. Main stem growing very close to building, 2.6m at closest point | 122.34 | 6.24 |
| T2 | Sycamore | 10 | 530 | N: 3 E: 2 S: 3 W:3 | M / OM | P | F | C.2 | Less than 10 years | Poor tree with cavity at base on west side from ground level to 1.5m - at least 40% of stem decayed. Previously pollarded at 33m. Lower-mid canopy now reduced to branch framework only - within past 6 months. Limited lifespan | 127.09 | 6.36 |
| T3 | Lime | 14 | 600 | N: 3 E: 3 S: 3 W:3 | M | G | G | B.2 | 20 years + | Neighbouring tree; inspected from No.12. Appears sound from distant inspection. Light lean to east with union at 5m which appears sound. Reduced at midnight pollard at 6-11m and last reduced approx 2 years ago with fair re-growth | 162.88 | 7.32 |
| T4 | Maple | 15 | 520 | N: 4 E: 2 S: 1 W:2 | M | F | G | B.1 | 20 years + | Sited in front garden tree has significant buttress roots. Straight main stem to 5m with 2 x dominant stems thereafter. Reduced to high pollard at 8-12m | 168.36 | 6.24 |

Appendix B

Existing & Proposed Plans (T001-T002)

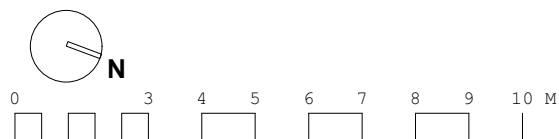
Including

Tree Constraints Site Plan (T003)
(BS5837:2012)

12 Lyndhurst Gardens
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TREE CONSULTANCY



1. In accordance with BS5837(2012) this drawing is a colour coded schedule and should not be read in black and white
2. If received electronically it is the recipients responsibility to print this drawing to correct scale. Only written dimensions should be used where not printed to scale.
3. This drawing should be read in conjunction with all other relevant drawings and specifications
4. Marcus Foster Arboricultural Design & Consultancy accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided

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Appendix C

Site Photographs for trees T1-T4:

12 Lyndhurst Gardens
London
NW3 5NR

** Taken January 2018 - MFoster*

C: PHOTOGRAPHS - 12 Lyndhurst Gardens, London, NW3

Tree T1 within the rear garden as viewed in an easterly direction



Base / Initial main stem of tree T1 within the rear garden as viewed in an easterly direction



Base of tree T1 within the rear garden as viewed in a southerly direction



Tree T2 (with T3 outlined behind) within the rear garden as viewed in a southerly direction



Base of tree T2, heavily decayed on northern side to 1.6m



Base of tree T3 within the rear garden as viewed in a southerly direction



Tree T3 (with T2 outlined in front) within the rear garden as viewed in a southerly direction



Main stem of tree T4 within the front garden as viewed in a easterly direction



Base of tree T4 within the front garden as viewed in an easterly direction



PHOTOGRAPHS TAKEN JANUARY 2018

Appendix D: **Tree Protection Notice**

Generic Tree Protection Notice
(BS5837: 2012):

*Notice to be clearly shown on site where
fencing constructed
AT ALL TIMES*



Appendix E

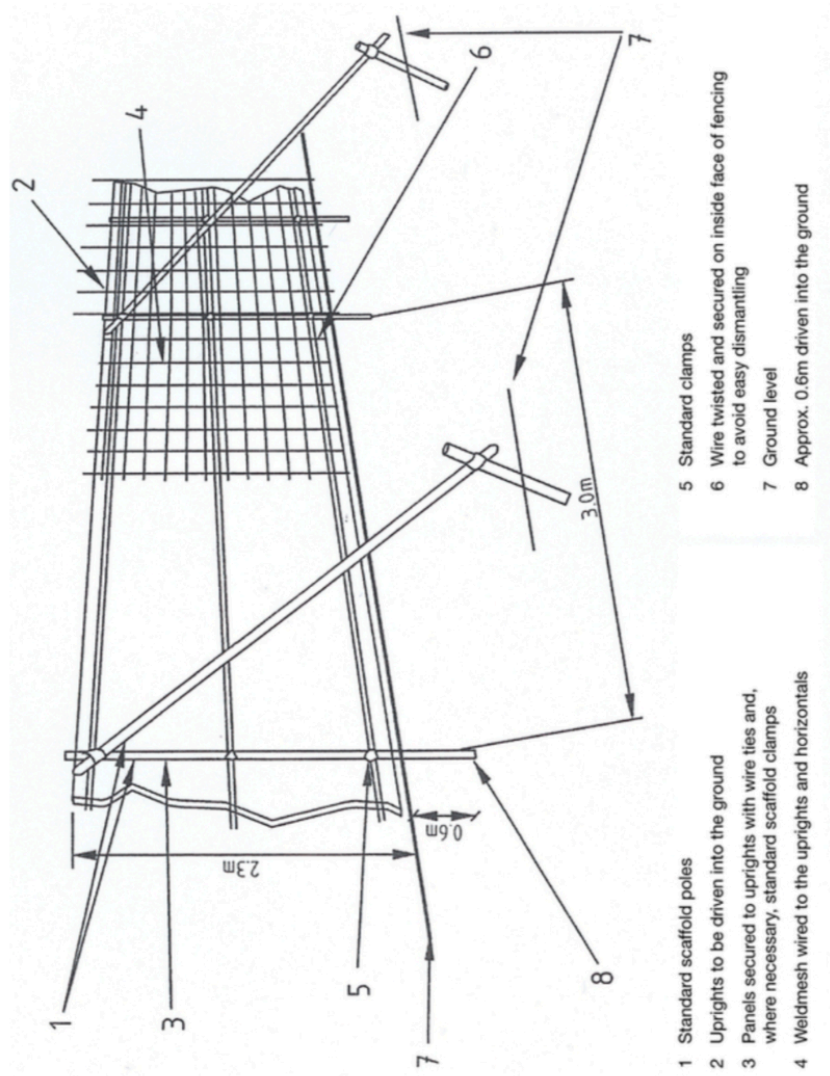
Tree Protection Fencing Specifications

Appendix E1

Tree Protection Fencing as outlined in BS5837 (2012)

Specifications

BS5837:2012 (Diagram 2)



Appendix E2

Basal Shuttering Tree Protection Fencing Example

Basal shuttering offers immediate protection for the lower main stem and initial root plate of a tree where exposed with a porous surface. This method of tree protection does not offer protection to the root plate of a tree where surfaces are exposed / development works are being undertaken within the Root Protection Area of a tree. however, it does offer immediate protection to the main stem and provides vital clearance between the tree and construction site activities such as storage of materials, ad hoc toilet usage and compaction of exposed soft landscaped ground (in addition to many other additional construction site activities).



Photograph taken by Marcus Foster within City of Westminster, 2015

Appendix F: References

1. BS5837: British Standard: Trees in relation to construction - Recommendations, British Standard (2012)
2. Principles of Tree Hazard Assessment and Management, Lonsdale, D. (Department for Transport, Local Government and the Regions, 1999)
3. The Body Language of Trees, Mattheck, C. and Breloer, H. (HMSO, 1994)
4. Trees in Britain, Philips, R. (Pan Books, 1978).
5. Diagnosis of Ill Health in Trees, Strouts, R. and Winter, (TSO, 1994)
6. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2), (November 2007)