

ARBORICULTURAL REPORT

CLAGUE

190 GOLDHURST TERRACE
SOUTH HAMPSTEAD
CAMDEN, LONDON
NW6 3HN

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LLOYD BORE LTD
33 ST GEORGES PLACE
CANTERBURY
KENT CT1 1UT

Tel: 01227 464 340
Fax: 01227 464 341

mail@lloyd bore.co.uk
www.lloyd bore.co.uk



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Author	Joanna Hamilton. BSc (Hons) TechArborA
Checked/Approved by	Ian Lee. BSc (Hons) MArbor A, Techcert (Arbor A)

EXECUTIVE SUMMARY

- S.1** This report is intended to provide guidance for the designs of any development on and adjacent to 190 Goldhurst Terrace, Camden, London, NW6 3HN.
- S.2** 2 individual trees are the subject of this report which has been written in accordance with British Standard, BS 5837:2012 'Trees in relation to demolition, design and construction – Recommendations'.
- S.3** 1 tree has been categorised as B grade of moderate quality and value. 1 tree has been categorised as C grade trees of low quality and value.

1. INTRODUCTION

- 1.1. Brief:** Lloyd Bore have been instructed by Clague to carry out a survey of significant trees on and adjacent to 190 Goldhurst Terrace, Camden, London, NW6 3HN in accordance with the principles of British Standard BS 5837:2012, 'Trees in relation to design, *demolition and construction – Recommendations*' (The BS) and to prepare the following information to accompany a planning application:
- details of significant trees including an assessment of condition using BS 5837 categorisation.
 - a plan showing tree survey information, categorisation and root protection areas.
- 1.2. Site description:** The consists of the garden to the rear (north) of 190 Goldhurst Terrace taking into account the trees on the neighbouring properties. The garden is relatively small and is formed of a mix of lawn and paving with shrub borders around the boundary edging. Beyond the northern boundary fence there are two significant offsite trees. To the east and west of the site are the gardens of the neighbouring terraced houses.
- 1.3. Scope of this report:** This report covers trees on and adjacent to the site. It is concerned with the impact the development may have on nearby trees and the effect retained trees may have on the development. Its purpose is to allow the architects and designers to assess the potential impacts and constraints presented by the trees and inform their designs for any potential development.
- 1.4. Summary of the general impact of development on trees:** Development can adversely impact upon trees in a number of different ways, if arboricultural issues are not considered at an early stage of the development process. Considered and careful planning will prevent valuable trees being lost to development, damaged during the demolition and construction phases, or lost following completion of development from pressures to prune or remove.
- 1.5.** Damage to the branches or trunk may be quite obvious, but it is damage caused to the below ground portion of the tree which is less obvious and may have the most devastating long term effect on the future health and safe retention of a tree. Tree roots can be asphyxiated and die if the rooting environment becomes compacted or soil structure damaged or contaminated. This can easily occur, particularly on clay soils, even with the passage of light vehicles or pedestrians. It is important, therefore, that the root protection area (RPA)¹ is left undisturbed. Where this is unavoidable the

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

disturbance can be minimised by following a strict working methodology and through innovative engineering design. Building lines should be at least 2m outside the RPA to allow the movement of materials, the erection of scaffolding around the new structure and the installation of new services.

- 1.6. Trees are long lived organisms, which take time to mature, and if their protection is considered at an early stage, they can complement and increase the value of a development. Construction and demolition activities, including removal of existing hard surfaces, changes of land levels and services routes, must be considered at the design stage to achieve an appropriate relationship between existing trees and new structures.
- 1.7. **Legislation:** From a telephone conversation with Gerry Oxford from Camden Council on 5th August 2016 it is understood that none of the trees on the site are the subject of a tree preservation order (TPO), although at the time of writing this report it was unknown as to what property the 2 recorded offsite trees are in. Whether the 2 recorded trees are subject to a tree preservation order could therefore not be established. However the site is located within a conservation area (CA). Tree protection status is information which can be subject to change. It is therefore the responsibility of any persons undertaking tree works operations to the trees which are the subject of this report and in accordance with our recommendations, to undertake their own statutory checks.
- 1.8. The Occupiers Liability Act (1957 and 1984) places a duty of care upon tree owners to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore this report recommends works for safety reasons as well as work required to facilitate the proposal.
- 1.9. Common law allows pruning back to the property boundary line, the overhanging branches and roots as long as this does not contravene any statutory protection. However if the work is not carried out in accordance with best practice and the tree(s) becomes unbalanced and/or diseased as a result of the work, the owner may take civil action. Whilst common law does not require the tree owner to be consulted, it is courteous to inform him/her of the proposed works.
- 1.10. **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.

2. SITE VISIT AND OBSERVATIONS

- 2.1. **Site visit:** A site visit was undertaken on 3rd August 2016. The weather was cloudy with sunny spells.
- 2.2. **Methodology:** The trees are inspected from ground level only and from within the boundary of the site. Whilst every effort is made to ensure that the comments relating to the trees surveyed are accurate it must be noted that no climbing of trees, internal inspections or excavations of the root

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.

areas have been undertaken. All trees with a trunk diameter of 75mm or above are surveyed. All dimensions are accurately measured on-site unless otherwise indicated.

- 2.3. 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. Surveyed trees are identified with a prefix 'T' and a unique number on Tree Survey Plan 3910_DR_001. The tree canopies and their spread are shown with green shapes and Root Protection Areas (RPAs) are indicated by a solid blue line. The label attached to each tree shows the individual tree number and the grading of the tree
- 2.4. **Tree survey plan:** Tree Survey Plan 3910_DR_001 is based on a topographical survey supplied by the client, however the trees recorded were not included on the topographical survey. The trees have therefore been plotted by eye whilst on site. No liability for the accuracy of the plotting is accepted and distances should be checked on site. The Tree Survey Plan can only be used for dealing with the tree issues in relation to design. This can be found at Appendix 3. Below ground constraints are represented by the RPA (shown as a dashed blue line). Above ground constraints consist of the existing crown spreads of the trees and are represented by the solid outlines.
- 2.5. **Soil type:** An assessment of soils on-site was carried out by a desktop analysis using the National Soil Resources Institute website which identified the soils as likely to be slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. This is a guide only and detailed on-site soil analysis should be undertaken by the project engineer to inform the foundation design.
- 2.6. **The subject trees:** A total of 2 individual trees are the subject of this report which has been written in accordance with BS 5837. 1 tree has been classified as a 'B' grade tree of moderate quality and value. 1 tree has been categorised as a 'C' grade trees of low quality and value. The categories are explained in Appendix 1.
- 2.7. **Species and age distribution:** The 2 trees surveyed consist of an ash and a Leyland cypress. The ash (T1) is mature, and the Leyland cypress (T2) is early mature.

3. CONSIDERATIONS FOR DESIGN

- 3.1. Root protection areas:** The root protection areas shown on the tree survey plan show the theoretical root protection areas based on the ideal circular rooting area. As the stem diameters of the trees surveyed could not be taken, in the case of T1 an additional RPA has been shown to show an extended potential rooting area. The British standard allows for the shape of the RPA of retained trees to be altered under certain circumstances (see below), but not reduce its area whilst still providing adequate protection for the root system:
- a. The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age and condition and presence of other trees.
 - b. The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures and underground services).
 - c. The soil type and structure.
 - d. Topography and drainage.
 - e. Where any significant part of a tree's crown overhangs the provisional position of tree protection barriers, these parts may sustain damage during the construction period. In such cases, it may be necessary to increase the extent of tree protection barriers to contain and thereby protect the spread of the crown. Protection may also be achieved by access facilitation pruning.
- 3.2.** Trees have the potential to intercept light into windows and cast shade onto external landscape areas. The design of any new development must take into account existing and proposed tree positions. It should be borne in mind that up to half the light received through a window is from ambient or non-directional scattered light that is reflected from other surfaces and not directly from the sun.
- 3.3.** Proposed landscape treatment should be designed with growth of trees and shrubs in mind, relative to buildings, window positions and gardens. Tree and vegetation cover does have the benefit of providing shelter from the wind and shade in the summer months.
- 3.4.** It is important that all aspects of the development process are considered with respect to protection of trees and their root zones, and proposed tree positions. This includes for the design of underground services, which often occurs independent of initial planning design and can escape scrutiny at the development control stage.
- 3.5.** All services should be designed so as not to cause damage to retained trees. In this respect reference should be made to the current National Joint Utilities Group (NJUG): Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees.
- 3.6.** Roots of existing and newly planted trees have the potential to cause damage to structures, foundations and services. This should be taken into consideration by the project engineer and Landscape team when designing these elements.

4. DISCUSSION

- 4.1. The two trees which were surveyed are both offsite and their locations were not identified on the topographical information. The trees were therefore surveyed from within the site with a limited view and their location was plotted by eye. The shrubs in the garden borders were not recorded as part of this survey as their stem diameters were below 75mm, meaning that under BS 5837 they are deemed arboriculturally insignificant. Details about the 2 trees surveyed are highlighted below:
- 4.2. **T1: Common Ash (*Fraxinus excelsior*)** - T1 is the tree with the most significance within this report. It is a large ash tree occupying a relatively small space. At the time of surveying it was recorded as a 'B' grade tree of moderate quality and value. The reason it was not awarded an 'A' grade (particularly A2 - of high landscape value) was mainly due to the limitations of the inspection. Though it has an imposing size, the longevity of such a tree in its current restrictive location has to be questioned. This therefore decreased its remaining contribution in terms of its British Standard classification lowering its category value.
- 4.3. Overall the tree appears to be in good health, with no visible major defects.
- 4.4. Without having a definitive stem diameter measurement of T1, it was important to show a range of rooting areas the tree could occupy to potentially highlight a worst case scenario. For this reason there are two RPAs shown on the tree survey plan (3910_DR_001).
- 4.5. **T2: Leyland Cypress (*Cupressus x leylandii*)** - T2 is found growing to the east of T1, forming an under storey tree. It was large enough to be included within the survey but is of low quality and value (C grade).

5. CONCLUSIONS

- 5.1. 2 trees were recorded as part of this survey. 1 tree being recorded as a 'B' grade tree of moderate quality and value, and the other being recorded as C grade of low quality and value.
- 5.2. T1 has an extensive RPA which extends into site, an extended RPA has also been added to the tree survey drawing to accommodate for the inability to measure the stem diameter and the lack of topographical information.
- 5.3. Prior to any works being carried out on site an Arboricultural Impact Assessment should be undertaken to assess which trees should be retained, which should be removed and where special construction measures are required. This will also detail any pruning works required to retained trees.
- 5.4. Where archaeological or contaminated land reports and hard and soft landscape design plans are prepared for the site, these should be cross referenced with the Arboricultural Impact Assessment to ensure there are no conflicts in land treatments, recommendations or retention plans.
- 5.5. The routes of any proposed services must be assessed by the arboriculturist and a detailed arboricultural method statement written where the services run through the RPA of any retained tree.

6. APPENDIX 1 - TREE SURVEY KEY

The schedule tree survey lists the trees and groups included in the survey and details the following:

- Species;
- Height (m);
- Trunk diameter generally at 1.5 m above ground level (mm);
- Branch spread (m);
- Height of crown clearance and height and compass direction of first significant branch(m);
- Age class (newly planted, Y , SM , M , over-mature, veteran);
- Physiological condition (good, fair, poor, dead);
- Structural condition (as determined from the ground);
- Estimated years remaining (<10, 10-20, 20-40, >40);
- Category grading (U or A to C).

Species: Species of tree with both common and botanical names.

Ht: Height in metres.

Ult ht: Ultimate height likely to be achieved for this tree in this location.

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.

NSEW: Crown spread at the four cardinal points. \emptyset = average crown radius.

Cr ht 1: Height of first significant branch above ground level and direction of growth.

Cr ht 2: Height of canopy above ground level.

Cond: Physiological and structural condition. G = good; F = fair; P = poor; D = dead.

Life exp: Estimated remaining contribution in years.

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.

The report includes the following categories as indicated in BS 5837:2012.

To be assessed in respect of arboricultural, landscape and/or cultural (incl. conservation), values.

Category A: Those of high quality and value, those in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).

Category B: Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

Category C: Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm.

Category U: Those 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.

Criteria (subcategories):

1. mainly arboricultural value.
2. mainly landscape value.
3. mainly cultural value.

7. APPENDIX 2 - TREE SURVEY SHEETS

Tree Ref No.	Common Name	Species	Height (m)	No. of Stems	Stem diam.(mm)	Root Protection Radius (m)	Canopy Spread N (m)	Canopy Spread E (m)	Canopy Spread S (m)	Canopy Spread W (m)	Crown Clearance (m)	Age class	Condition	Comments	Est. Rem. Contr. (Yrs)	Cat. Grade
T1	Common Ash	Fraxinus excelsior	18	1	700	8.4	8	8	10	8	0	M	Good	Large offsite tree behind wooden garden fence, approx 1m from fence, surveyed from within site, not picked up on topo, upright even form, limited inspection, broken branches, lapsed epicormic growth on south side of stem, limited growth space, cannot measure stem	20+	B1
T2	Leyland Cypress	Cupressus x leylandii	5	1	200	2.4	3	4	4	4	0	EM	Fair	Offsite tree behind fence, not picked up on topo	10+	C1

8. APPENDIX 3 - TREE SURVEY PLAN

Please see attached plan: 3910_DR_001