LIAM MCGOUGH TREE SERVICES Liam McGough Tree Services, 36 Queens Rd, N11 2QU

LIAM MCGOUGH
TREE SERVICES

BS5837 Report

Client: Helen Gibson

Site location: 59b Eton Ave, NW3 3ET
Date: 19/11/20

Report type: tree survey

Prepared by Liam McGough FdSc Arb M ArborA

LIAM MCGOUGH TREE SERVICES TEL: 07738004625/020 80131187 EMAIL: lamcgough@hotmail.com

Contents

1.0 Introduction

1.1 Scope & Brief

A survey was carried out at the request of Helen Gibson. To assess any current signs, or potential future risk, of root damage, as a direct result of building a studio at the bottom of the garden. With a view to protecting a large mature sycamore tree at the boundary of the garden.

The safety level of the trees based on their current status was also observed and recorded.
The purpose was to identify trees within the property boundary with regards to their potential ground disturbance if removed and left to grow. e.g transpiration of water from clay soil etc.

Subsequent works were recommended to alleviate any issues identified regarding root damage, the construction of the studio, and from a health and safety and property development perspective.

Trees requiring works were categorised as high, medium or low priority based on the methodology stated in **section 3.7**

The data recorded included, species (common name), height, DBH, crown spread in each direction, age, condition and distance of main stem from the property foundations. Detailed explanations of these criteria are in the methodology section of this report (**section 3**).

The data is recorded in the Tree Survey Schedule section (**section 4**) of this report and includes comments identifying any damage to property foundations, faults and hazards with respect to crown form, condition, storm damage and disease. A recommended action was given for each tree. No bore hole and DNA testing has been carried out for this report.

All works recommended should be carried out in accordance with BS 3998:2010 Tree Work - recommendations.

Individual trees are plotted on separate site plans and accompany each respective tree survey schedule (**section 4**), and tree work schedule (**Appendix**).

1.2 Limitations

All observations were from ground level without detailed inspection and were not inspected from underground excavation or from an aerial perspective.

As trees are living organisms their health and condition can change rapidly. Extreme climate issues such as drought and flooding can affect soil shrinkage and overall tree health.
All statements made about the trees were based on the status of the trees at the time of inspection.

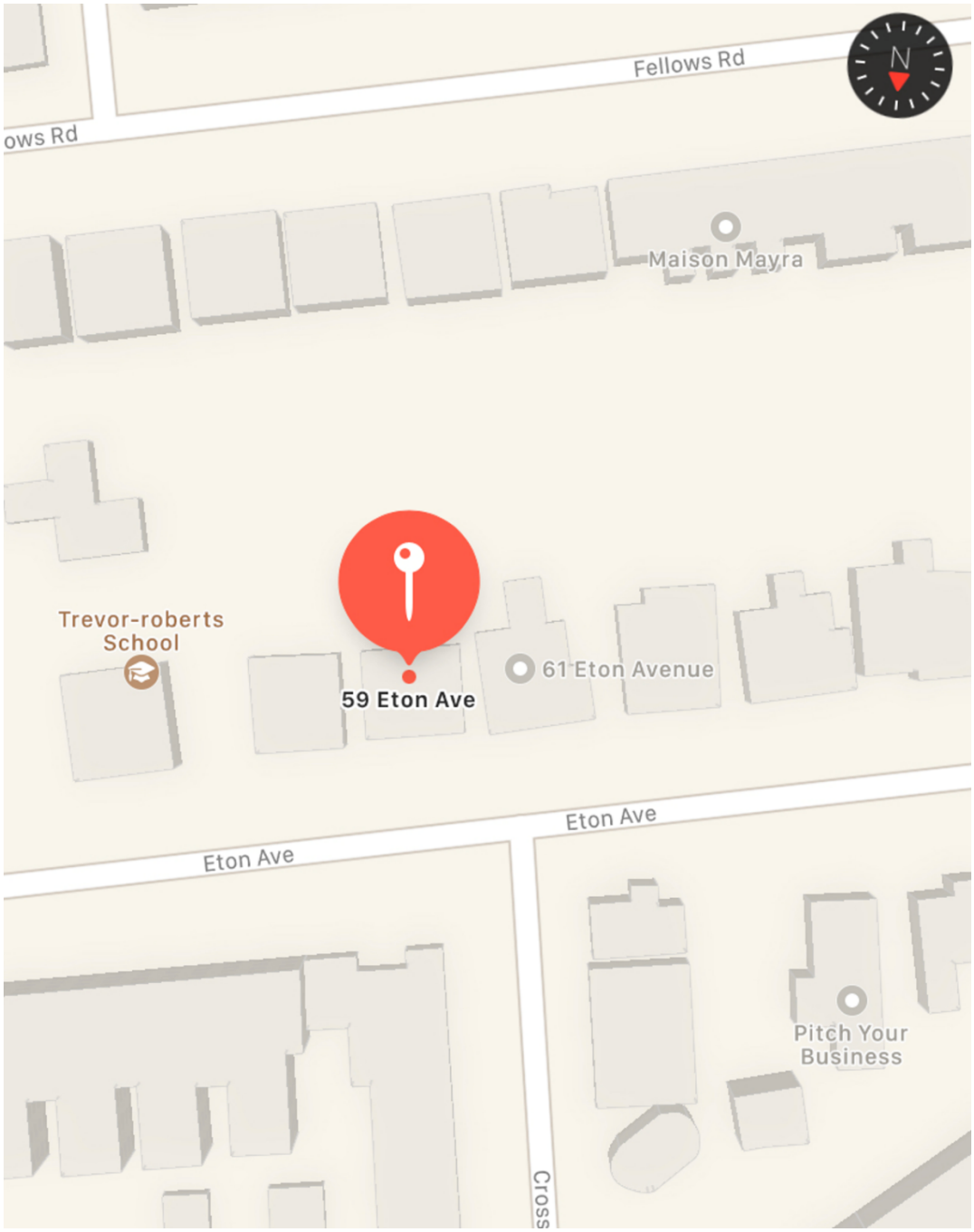
No bore hole testing or PICUS testing has been carried out at this site. All observations have been made using only visual indicators.

Trees with extensive ivy cladding were not thoroughly observed due to the difficulty to assess cavities and any hidden defects positioned underneath. With respect to this, the ivy should be severed to restrict its future growth and where applicable, removed to allow a detailed inspection to be carried out.

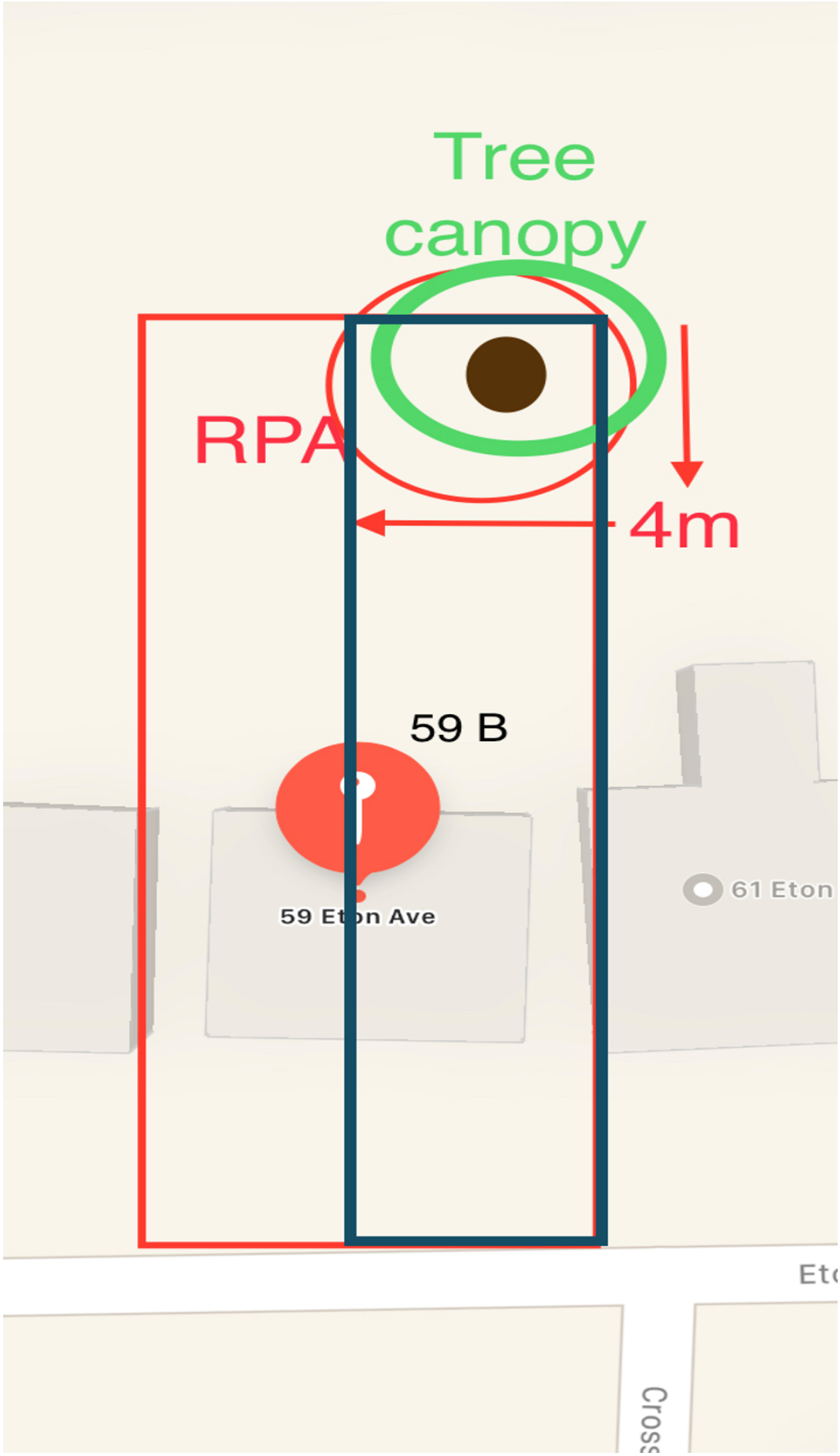
1.3 Site Location

59b Eton Ave, NW3 3ET

LIAM MCGOUGH TREE SERVICES **Liam McGough Tree Services, 36 Queens Rd, N11 2QU**



LIAM MCGOUGH TREE SERVICES **TEL: 07738004625/020 80131187 EMAIL: lamcgough@hotmail.com**


Tree
canopy
RPA
4m
59 B
59 Eton Ave
61 Eton

2.0 Statutory Protection

2.1 Tree Protection

A variety of statutory restrictions apply to felling, pruning or damaging of trees with preservation orders (TPO) or within conservation areas (Department for communities and local government, 2014). With exceptions of these restrictions available.

Any trees that require arboricultural works should be checked for any restrictions prior to works commencing.

Applications should be made for trees restricted with a TPO and a six week notification made for works in a conservation area.

Where works are deemed exempt, a submission of a 5 day notification of works should be made in accordance with section 198 (6)(a) of the Town and Country Planning Act 1990.

2.2 Root protection area

General

The influence that trees on and adjacent to the site will have on the layout should be plotted on a plan called the tree constraints plan (TCP). This is a design tool which should show the below ground constraints,

represented by the RPA, and the above ground constraints the trees pose by virtue of their size and position.

Root protection area (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA should be

plotted around each of the category A, B and C trees (see 4.3). This is a minimum area in m2 which should be left undisturbed around each retained tree.

The RPA should be calculated using Table 2 as an area equivalent to a circle with a radius 12 times

the stem diameter for single stem trees and 10 times basal diameter for trees with more than one stem

arising below 1.5 m above ground level.

Calculating the RPA

The calculated RPA should be capped to 707 m2, e.g. which is equivalent to a circle with a radius of 15 m or a square with approximately 26 m sides.

The measurement of the diameter of the tree at breast height or 1.5m (D x12) / 1000 x 12

The RPA, for each tree as determined in Table 2, should be plotted on the TCP taking full account of the following factors, as assessed by an arboriculturist, which may change its shape 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. (For individual open grown trees only, it may be acceptable to offset the distance by up to 20 % in one direction.)

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. The need for such measures, including the precise extent of pruning, should be assessed by an arboriculturist.

2.3 animal protection

As part of the survey tree was inspected from ground level with the use of binoculars for signs of wildlife habitation, in particular birds and bats.

All bats and their roosts are protected by law (The Wildlife and countryside Act 1981 & conservation of Habitats as Species regulations 2010).

Penalties and prosecution for causing damage to bat's or roosts is up to £5,000 per bat and a prison sentence, plus confiscation of vehicles plant and machinery involved.

In the UK all wild birds and their nests are protected by law (The wildlife and Country side Act 1981 & The Countryside Act 2000).

The presence of Bats/roosts or birds nesting will be noted within the survey, where possible all works should be carried out to avoid the bird nesting season.

Prior to any tree works, a visual inspection should be carried out by a qualified person to ensure that there is no loss of protected wildlife habitat.

3.0 Methodology

The individual trees were assessed using Claus Mattheck's methods as stated in his guide to visual tree assessment, with a copy of the updated version at hand for instant reference.
The following data was collected for each tree;

- Species (common name)
- Height
- Age
- DBH
- Crown spread in each direction
- Condition
- Comments
- Action
- Priority

Each tree was given a sequential identification number and were plotted on the accompanying map.

3.1 Height

The height was measured using a clinometer and is expressed in metres (to the nearest metre)

3.2 Age

The age of each tree is expressed using the following terms:

- Y Young
- SM Semi-mature
- EM Early-mature
- M Mature
- OM Over-mature

3.3 DBH

The diameter of the trees' main stems was measured at breast height and is expressed in centimetres.

3.4 Condition

The overall condition of the trees was assessed with regards to its vigour, stem condition, and crown form, and is expressed using the following terms:

- P (Poor)
- F (Fair)
- G (Good)
- D (DEAD)

3.5 Distance from property

This measurement is expressed in metres and was used to evaluate current risk and future risk of subsidence or damage to property from roots.

3.6 Comments

Any signs of subsidence, hazards, defects or signs of disease observed were recorded.

3.7 Action

An action was recommended for each tree to alleviate any hazards/defects identified in the comments section of the data collected.

3.8 Priority

The priority for each action required was based on individual tree locations (e.g. near roads, footpaths or buildings) and the severity of the hazards identified in the comments section.

Recommended actions should be undertaken within the following time restraints from the date of the report;

High (H) - as soon as possible within a 3 month limitation.

Medium (M) – within 12 months.

Low (L) – if desirable and/or as part of a long term management plan.

A prioritised work schedule is located in the appendix section of this report along with all accompanying maps, and any supporting photographs.

4.0 Tree Survey Schedule

Tree No.	Species	DBH Cm/m	Height	Age	Crown spread N/S/E/W	Condition	Distance from property	Comments	Action	Priority
T2	Sycamore	44cm	12m	M	3,3,3,4	Good	15m	large size for location, previously pollarded and time for regular maintenance has elapsed	Reduce overall size canopy by 1m	M

4.1 Site description

Typical back garden for houses in this area, slight slope away from house, mix of lawned area and flower beds.

4.2 Soil assessment

Heavy clay with loamy sand and silt.

5.0 Data Analysis

Root protection area 4m from stem in every direction with an allowance of 20% in one direction

It is recommended that the build take place within this area providing all measures are taken to prevent root damage or prevent roots from being deprived of water and unable to expel gasses. I.e the construction should be above the level of the ground on piles or equivalent.

5.1 Conclusion

Providing the following considerations are made I see no reason to prevent the construction of the studio within the tree root protection area. When digging the piles for the above ground construction to be build, extra care must be taken to hand dig holes and move the location of holes to suit if larger roots are discovered.

Buildings should be constructed to allow for future radial growth of planted or self-sown trees, as the tree in question is mature. It is therefore unlikely to put on a large radial growth of its stem. A minimum of 1ft should be allowed for future growth.

Principles for avoiding tree root damage during construction

Prior to the installation of a new ground surface, existing ground cover vegetation (e.g. grass sward) should be killed using an appropriate herbicide (see Pesticides Handbook [15]). Herbicides that can leach through the soil, e.g. products containing sodium chlorate, should not be used. Specialist advice should be sought in order to determine the most suitable herbicide treatment.

The soil surface should not be skimmed to establish new paving or other surfaces at the former ground level. Loose organic matter and/or turf should be removed carefully using hand tools. The new surface should then be established above the former ground level, using a granular fill, where required.

If ground levels are to be raised within the RPA this should be achieved by use of a granular material which does not inhibit vertical gaseous diffusion. Examples of suitable granular materials include, no-fines gravel, washed aggregate, or cobbles. Depending on the California Bearing Ratio (CBR) of the soil, it may be necessary to install a load suspension layer such as a cellular confinement system.

In concentration carbon dioxide is detrimental to tree root function. Because this gas principally diffuses vertically through the soil, new impermeable surfacing within the RPA should be restricted to a maximum width of 3 m and situated tangentially to one side of a tree only, or confined to an area no greater than 20 % of the root protection area, whichever is the smaller.

Any excavations which have to be undertaken within the root protection area should be carried out carefully by hand, avoiding damage to the protective bark covering larger roots. Roots, whilst exposed, should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Roots smaller than 25 mm diameter may be pruned back, preferably to a side

branch, using a proprietary cutting tool such as bypass secateurs or handsaws. No roots larger than 25 mm will be severed, as they may be essential to the tree's health and stability. Should roots of this size be found, the screw piles will be repositioned, as stated in the Design and Access Statement. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand (builders' sand should not be used because of its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

NOTE 1 The use of a trenching saw reduces the risk of longitudinal root shattering which can often occur where backactors are used to excavate trenches near to trees.

NOTE 2 Due to the demands that hand excavation places on a development project and its limitations with regards to health and safety considerations, it may be preferable to employ no-dig techniques.

Provision for water and oxygen It is essential to maintain adequate supplies of water and oxygen for trees through the soil. Porosity is important particularly where the new hard surface covers an area of previously unmade ground, under which tree roots may have developed preferentially. New impermeable surfacing should not cover more than 20 % of the root protection area. No-fines granular materials should be used wherever fill or a sub-base is required to help to ensure adequate gaseous diffusion. Due to the need to avoid excavation, and thereby root severance, within the RPA such sub-bases should be formed using a cellular confinement system such as a load suspension layer laid at ground level. Excess water in the root protection area should be avoided, particularly on clay soils where waterlogging can occur. In these cases, the hard surface should slope away from the tree to avoid ponding. Provided surface water is not liable to be contaminated by salt or toxic run-off from oil or petrol, a permeable surface should be employed. If contamination is likely to be a problem, an impermeable surface may be used to prevent entry of toxic material. If excess water is likely to be a problem, consideration should be given to the provision of suitable land drainage. Such drains should not be located within root protection areas. Allowance for future growth Future growth can lift paths or distort light structures such as walls. Where such structures, including surfaces, are unavoidable near to trees, design and construction specification should take account of future growth. If it is necessary to build a wall or similar structure over a root greater than 50 mm diameter, provision should be made for future diameter growth by surrounding the root with uncompacted sharp sand, void-formers, or other flexible fill materials, and by laying an adequately reinforced lintel or raft over the surface.

Foundations within the RPA

The insertion of structures within root protection areas may be justified if this allows the retention of a good quality tree. However, it is essential that careful consideration is given to foundation design. In such cases, the use of traditional strip footings, in particular those constructed tangentially across the root zone, can result in severe damage to tree roots and should be avoided. Root damage can be minimized by using a combination of the following:

— piles or radial strip footings both of which should be located to avoid major tree roots;

— beams, slabs, suspended floors, where all should be laid at or above ground level, and cantilevered as necessary to avoid tree roots. In order to arrive at a suitable solution, site specific and specialist advice regarding foundation design should be sought from an arboriculturist and an engineer. Where piling is to be installed near to trees, the smallest practical pile diameter should be used as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. The latter is particularly important where piling within the branch spread is proposed, as mini-rigs reduce the need for access facilitation pruning. Sheathed piles protect the soil and adjacent roots from the potential toxic effects of concrete.

6.0 Glossary of Terms & Definitions

arboriculturist
person who has, through relevant education, training and experience, gained recognized qualifications and
expertise in the field of trees in relation to construction (see Annex B and the Foreword)

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 (see Foreword)
NOTE 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can
arise. For example, when on site, a competent person is able to recognize at all times whether it is safe to proceed.
NOTE 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be
implemented.

structure

man-made object, such as a building, carriageway, path, wall, services, and built and excavated earthworks

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

root protection area (RPA)

layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m2

tree constraints plan (TCP)

plan prepared by an arboriculturist for the purposes of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.

Amenity- the pleasantness or attractiveness of a place.

Asymmetrical crown- unbalanced, one-sided.

Cavity- hole within a stem/branch of a tree, caused by decay or damage.

Crotch/fork/ union - region formed by a junction of two branches, or stem and branch.
Crown- overall branch and foliage cover.

Deadwood- dead branches within the crown of a tree. <30mm diameter classified as minor deadwood, >30mm major deadwood.
Dieback- ends of branches with no leaf coverage, sign of decline.

Early-mature- a tree that has not reached maturity but is deemed to be 2/3 the way through its life expectancy.

Epicormic- shoot growth from dormant or adventitious buds on main stems or branches.

Fastigiate- Upright crown form.

Good form- good crown shape and size expectant of specific species characteristics.

Over–mature- a tree that has exceeded its life expectancy.

Mature- a tree that has reached the final third of its life stage.

Stem- above ground structure that supports the branches of a tree.

Vigour- physical strength and health of a tree.

Appendix

Google map showing trees and property


N

This report has been carried out and compiled by

Liam McGough FdSc Arb M ArborA

15a Bedford Rd, London, N22 7QU

07738004625/020 8013 1187

www.treesurgeon.co.uk

REFRENCES

BS:5837:2012. Trees in Relation to design, demolition and Construction. British Standards

BS:3998:2010 Recommendations for Tree Work. British Standards

Manual of Wood Decay. K.Weber, C.Mattheck.

Principles of Tree Hazard Assessment and Management. Forestry Commission.

Diagnosis of Ill-health in trees. Forestry Commission.

NHBC Standards: Chapter 4.2 Building near trees. National Housing Building Council

National Joint Utilities Group (NJUG) Volume 4. National Joint Utilities Group.

http://www.njug.demon.co.uk/pdf/NJUG%20Publication10.pdf

Updated Field Guide for Visual Tree Assessment. C.Mattheck.

Trees of Britain and Northern Europe. Collins.