

6a OSPRINGE ROAD

KENTISH TOWN

LONDON

NW5 2JE

BS5837 TREE SURVEY

&

ARBORICULTURAL IMPACT ASSESSMENT

REPORT PREPARED BY:

Andrew Marshall, M.Sc., B.Sc, ND Arb, LANTRA PTI,

# Executive Summary

The proposed development is to build a single storey garden room in the rear garden of 6a Ospringe Road. The design and construction methods have not yet been finalised.

The development would affect 4 trees. Of these 1 small Cherry will need to be removed, and 1 small fir pruned. The other 2 trees are large Sycamores, one on the site and one in a neighbouring garden. These are significant trees in the landscape and should be retained.

The building would be located in the Root Protection Area (RPA) of the two large Sycamores. Recommendations are made for the design and construction of the building. Provided these recommendations are followed it will be possible to build the building in this location without there being a significant detrimental effect on the trees.

Tree Protection Methods have been detailed which will protect the trees from damage during the construction process.

Provided the design and construction recommendations and Tree Protection measures are followed, there is no arboricultural reason why the development should not take place.

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# INSTRUCTION

The owner of 6a Ospringe Road instructed us to prepare a tree impact report on a large Sycamore in the rear garden of the property which might be affected by the proposed construction of a garden room, as part of the process of applying for planning permission.

On visiting the site it became clear that several other trees might be affected by the development, and the most appropriate method of assessing the problem would be to prepare a report in accordance with British Standard 5837:2005 – Trees in Relation to Construction – Recommendations. The report identifies trees suitable for retention where feasible, and makes recommendations for their protection during the construction process.

# Methodology

The site was inspected on Monday 12th September 2016, using a site plan supplied by the client, for orientation. The weather was overcast, with some light drizzle. Full access was available to the development site, however some of the trees affected are located in neighbouring properties where no access was available. These trees were assessed based on what was visible over the garden wall/fence.

The trees were inspected using the Visual Tree Inspection methodology from ground level, with the use of binoculars, mallet for sounding and a probe to assess decay. No further test or climbing inspections were undertaken.

# The Site

The site is the rear garden of 4 storey + attic Victorian terraced residential building. Access is via the lower ground floor flat, which owns the garden.

The proposed development is at the rear of the garden, in an area which is mainly bare soil with a large concrete slab which was the base for a previous shed which has been removed. The garden is bounded by 0.5m brick walls, with a 1m fence on top. The wall between the site and the property to the west has been affected by the growth of a large Sycamore (T1 in the survey) and has been demolished. There is a considerable change in ground level (1m) between the site and the neighbouring garden to the North, and to the northernmost of the flanking gardens to the East.

Between the proposed development site and the building there is another area of garden which has been planted with shrubs, small trees and other plants. There is a central path leading to the development site which is paved at the end nearest the house but is soil at the further end.

# The Development

The proposed development is to build a new wooden framed and wood-panelled and glazed garden room at the rear of the garden, in close proximity to the large Sycamore, T1. At the time of the survey the design and location had not been finalised, but the intention was to use the existing concrete slab as part of the base of the new building. The approximate location is shown on the Tree Constraints Plan, Appendix 1.

# Protected Trees

According to the Owner, none of the trees on the site are protected by Tree Preservation Orders, and the site is not in a Conservation Area.

# Tree survey

Trees are plotted on the Tree Constraints Plan, appendix 1, and photographs are given in Appendix 2. Some of the trees which will potentially be affected be the development are located in the neighbouring properties 147 and 149 Brecknock Road.

## Survey data

See next page

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tree Number | Tree Species | DBH (mm)(Basal diameter if multistem) | Height (m) | Crown Spread (m) | Crown Height above ground (m) | Root Protection Area (RPA) Radius (m) | BS58367 Tree Retention Category | Condition | Owner |
|  |  |  |  | N | E | S | W |  |  |  |  |  |
| T1 | Sycamore*Acer pseudoplatanus* | 890(twin stem) | 21 | 9 | 9 | 5 | 8 | 3 | 8.9 | B1 | Fair – trunk wound, deadwood | ON SITE |
| T2 | Fir*Abies sp* | 120 | 5 | 1.5 | 1.5 | 1.5 | 1.5 | 1 | 1.44 | C1 | Good | NEIGHBOUR |
| T3 | Flowering Cherry*Prunus sp* | 90 | 4 | 1 | 1 | 1 | 1 | 2 | 1.08 | C1 | Fair | ON SITE |
| T4 | Sycamore*Acer Pseudoplatanus* | 500 | 12 (approx) | 4 | 4 | 4 | 4 | 4 | 6.0 | B1 | Fair | NEIGHBOUR |

The BS5837 Tree Retention categories are:

A: Trees of high quality and value

B: Trees of moderate quality and value

C: Trees of low quality and value

R: Trees of such condition that any existing value would be lost within 10 years, and which should be removed for reasons of sound arboricultural management.

Tree categories are subdivided based on the criteria which they fulfil to meet the broad quality category. See BS5837 for full details. All trees in categories A, B and C should be considered for retention.

## Other vegetation

As discussed in the site description above, there is an area of garden between the proposed development and the house which contains small trees and shrubs, as well as other planting. These will not be directly affected by the proposed development and have a maximum retention rating of C, due to their small size. There may be some impact from traffic along the path during construction, which will be dealt with in the Tree Protection Plan.

## Comments on trees

(See Appendix 1 - Tree Constraints Plan for tree locations and Appendix 2 – Tree Photographs)

T1 – Sycamore is a large mature twin stem tree located in the north-west corner of the site. It has a 25x10cm trunk wound below the union between the two stems. The exposed wood in the wound is stained white but is solid. There are good woundwood ribs around the wound and it is progressing towards being occluded. This wound does not present an immediate hazard. The tree roots have grown under the garden wall on the west side and have damaged it to the extent that the wall has been demolished. There is some 5cm thick deadwood over the neighbouring gardens to the north and west. The tree has previously been lifted to 6m, although the branches have grown downwards since. It has also had significant reduction over the neighbouring garden to the west.

T2 – Fir is a young, small tree in the garden of 149 Brecknock Road. No access was available to inspect it in detail. It appears to be in good condition. The garden of 149 has a ground level 1m lower than the site, and it is unlikely that the construction would have any effect on the tree. The branches project into the site.

T3 – Cherry is a young small tree. It is close to a neighbour’s shed, and has a kinked trunk and asymmetric crown, giving it a poor shape at present.

T4 – Sycamore is a medium to large size tree in the garden of 147 Brecknock Road. This garden is banked up at the rear so the tree is at the same level as the site. No access was available to inspect the tree in detail. The tree has been heavily reduced (topped) at a height of 12m

# Amenity Value

Tree T1 is a large, imposing tree, but it has very limited visibility to the public, being visible only through some gaps between surrounding buildings. It is however visible from a considerable number of surrounding properties, and so does contribute to the amenity of the area, and should be retained.

T2, a fir located in the garden of 149 Brecknock Road is of good form and in good condition but is currently too small to make a significant contribution to the amenity of the area. It is no visible to the general public. The proposed development should not have any effect on it apart from minor pruning to facilitate construction.

T3 – Cherry, is a small tree of poor form which is not visible to the general public and makes no real contribution to the amenity of the area.

T4 is a medium to large Sycamore in the garden of 147 Brecknock Road. It has very limited public visibility through gaps between buildings, but is visible to a considerable number of surrounding properties. Its amenity value has been significantly reduced by heavy reduction, but it still contributes to the amenity of the area and should be taken into account in planning the development.

# Arboricultural Implications Assessment

The design for this development had not been finalised at the time of inspection, and no details of the proposed construction methods were available. This assessment is based on the information supplied by the client, and makes recommendations to inform the design process and construction plan. When detailed proposals are available they should be examined by a qualified arborist or the Local Authority Planning Department to ensure that they conform to these recommendations or otherwise address the protection of the trees to be retained.

If the proposal is changed it will be necessary to reevaluate the arboricultural implications.

There are 2 important trees (T1 and T4) on this site which should be retained. The presence of these trees has implications for the design and construction of the building, and they will also require Tree Protection measures during the construction process.

## Design issues relating to trees

The location of the proposed development is within the Root Protection Area (RPA) of the two significant trees on the site, T1 and T4. In general construction on the RPA of a tree should be avoided because the RPA is the minimum area of roots which should be left undisturbed in order to ensure the future health of the tree. Construction within the RPA can cause damage to the tree’s root system either by direct physical damage to the roots, such as cutting or crushing, or by compacting the soil so that there is no longer a free movement of water, nutrients and gasses and the function of the roots is impaired. This is a particular constraint on this side since the British Geological Survey (BGS) 1:50,000 geological map shows that the area is underlain by compressible London Clay. Construction within RPA also reduces the area which will absorb water from rainfall, and thus reduce the amount of water available to the tree.

On this site there is no sensible alternative to the proposed site of the building. BS5837:2005 - Trees in relation to construction – Recommendations allows for construction within a Root Protection Area where there is a significant tree which should be retained and the construction cannot be relocated. In this case the building is a relatively light construction and construction can take place without causing significant detriment to the tree, provided the following guidelines are followed.

Traditional strip footings should be avoided as these would result in severe damage to the tree’s root system. Radial strip footings or piles can be used, with beams, slabs or suspended floors at or above ground level.

Apart from the potential damage to the roots from construction, the presence of the building will make an impermeable surface, reducing the amount of water input to the trees’ roots. The trees’ roots will however extend well beyond the area of the building, and providing the roots remain alive they will be able to function and extend in the area outside the building footprint to compensate for the loss of water absorbing area. BS5837 recommends that impermeable surfaces within an RPA should not be more than 3m wide, and should not occupy more than 20% of the total RPA area. In this case the planned building satisfies these requirements. The impermeable surface also stops vertical gaseous diffusion, which is needed for root health since the roots require oxygen and produce carbon dioxide which must be carried away. Using a gravel layer to level off the site and having a gas permeable (e.g. perforated) edging to retain it will help to mitigate this by allowing some gaseous diffusion at least at the edge of the building footprint.

The design of the building and the construction process had not been finalised at the time of inspection. The building company should produce a design and construction methods which follow the guidelines in this report. The design and methods should be approved by a qualified arborist or by the Local Planning Authority prior to the commencement of construction.

### Design Guidelines

1. The existing concrete slab should be retained and used for the new construction, since it acts as a protective layer for the roots beneath
2. The soil should not be disturbed – if needed the surface should be built up with a permeable substrate such as gravel to level the surface. The substrate must not contain hazardous chemicals or have an excessive lime content.
3. The levelled surface may be retained by a frame resting on or supported above the ground surface. This frame should be gas permeable to allow for some gas exchange at least around the edges of the construction, to help retain root functionality.
4. It is permissible to use posts or piles to support a framework. Prior to installing the posts the site should be investigated to ensure they will not damage major roots (e.g. by careful hand digging or ground radar).
5. The flooring for the new building could be constructed by placing boarding or pre-cast panels on a frame, or concrete could be poured over a geotextile membrane or boards laid over the permeable substrate (the designers may propose other suitable methods).
6. If underground services arerequired these should be installed without trenching or by hand digging as recommended in BS5837. They should run radial to the tree and should enter the building at a point as far away from the trees as possible.

## Impact of the trees on the construction process

There are a number of trees which will have an effect on the construction process. This section considers these problems and their mitigation.

The branches of T2 grow into the site and would interfere with construction. These branches should be pruned back to the site boundary.

Tree T3 is close to the proposed site of the building, and would also be too close to the completed building, causing potential problems as it grows. It should be removed

The vegetation in the cultivated part of the garden is close to the path which would be used to bring in construction materials. The vegetation should be pruned back from the path as required to prevent it from being damaged by or impeding the transport of materials. This is essentially a gardening task since the trees there are small.

## Tree Protection during construction

This is a relatively small construction project, with a relatively light proposed building. As long as the building is correctly designed to allow the trees to thrive there is relatively little risk to the trees from the construction process itself, so the Tree Protection Plan is relatively simple.

The design is still at the proposal stage and there may be changes, in which case the Tree Protection Plan will need to be reconsidered. Tree protection measures are shown in Appendix 3: Tree Protection Plan.

1. Since the proposed building is close to tree T1 it is impractical to fence off the tree (and the fence itself might cause damage if pushed onto the tree). It should not be necessary to use heavy machinery for the construction so the possibility of direct damage to the tree is low.
2. A notice should be attached to T1 using non-invasive methods (e.g. string, tape or adhesive tape) with a wording such as: “This tree is protected. DO NOT lean materials or tools against it, and DO NOT stack materials immediately next to the trunk”.
3. The soil around the building should be protected from compaction during construction by the laying of boards, levelled up with gravel if necessary, so that loads are distributed. This is particularly important if the soil is wet. The boarding should continue down the unpaved part of the path leading to the house to prevent compaction during transport of materials.

## Possible effects of retained trees on the completed building

There are two potential problems associated with trees in proximity to buildings: direct physical damage and subsidence related damage.

### Direct physical damage

Direct physical damage may be caused by the physical contact of roots, or trunk with the building. This will only occur when the tree is extremely close to the building. The north-west corner of the proposed building is close to T1 – Sycamore, however the existing concrete slab in this area shows no signs of damage at present, and there is no indication this will change in the near future. BS5837 recommends a minimum distance of 1.5m for a light structure in proximity to a tree of this size, and the design should take this into account (the corner of the concrete slab is 0.65m from the tree).

 There may also be problems caused by contact with branches. There will be no immediate problems with this, but as the trees (particularly T2) grow they may come into contact. This can be prevented by routine tree inspections and remedial work as required.

### Subsidence damage

Subsidence damage occurs when trees extract water from shrinkable clay soils. The British Geological Survey (BGS) 1:50,000 geological map for this area indicates that the bedrock is London Clay, which is highly shrinkable. This should be considered in the design process, but subsidence is unlikely to be a significant problem for a structure of this type.

# Pre-Construction Tree Work

The following tree work is required prior to construction. Tree numbers are taken from the tree survey and shown on the Tree Constraints Plan (appendix 1) and Tree Protection Plan (appendix 2).

|  |  |  |
| --- | --- | --- |
| Tree Number | Species | Work Required |
| T2 | Fir | Prune branches back to property boundary  |
| T3 | Cherry | Fell and grind trunk |
| Vegetation in cultivated area of garden | Various | Prune away from path as required for access |

# About the author

Andrew Marshall (M.Sc., B.Sc,) graduated from Capel Manor College in June 2007 with a BTEC National Diploma in Arboriculture. Since then he has worked on numerous surveying contracts, including major surveys for Birmingham City Council and Transport for London. He has also undertaken temporary work as a Tree Officer in several London Boroughs and other local Councils, including Tower Hamlets, Camden, Islington and Brent. This includes extensive experience both of inspecting and managing Council owned trees, and also dealing with Tree Preservation issues and providing advice to planners in respect of development proposals.

Andrew Marshall holds the LANTRA Professional Tree Inspection qualification.