



the tree bureau

Arboricultural consultancy, design and management



## **Arboricultural Impact Assessment**

48 Newberries Avenue

Radlett, Herts WD7 7EP

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by

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# 1 Introduction

- 1.1 This impact assessment, commissioned by Nilam and Bhupendra Mistry, deals with proposed development at 48 Newberries Avenue, Radlett, Herts WD7 7EP. The proposed scheme includes a new two-storey front, a first-floor side extension and part two-storey rear extensions and loft conversion. A raised roof and window changes are also involved.
- 1.2 The report assesses the trees that might influence or be influenced by the application development, outlines the key likely tree-related constraints and identifies issues that would need to be addressed if planning approval were granted.
- 1.3 Please read the report in conjunction with the :
  - *Tree Constraints Plan* (drawing TCP 7750)
  - architectural drawings by PLK Design Ltd, which are provided separately from this report.
- 1.4 The framework for this report and its associated constraints plan is the British Standard BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations* because this is the Standard used by local planning authority officers when considering trees affected by development proposals.
- 1.5 Section 2 of the report deals with the site's current status. Section 3 deals with the tree condition and quality inspection, with the details of my findings shown in the *Tree Inspection Schedule* in Appendix A. Section 4 considers the impact of the proposed development and Section 5 summarises my conclusions.

## Background

- 1.6 I visited the application site on 18 and 23 October 2023 to assess the site, inspect the 'material' trees and consider development constraints.

## 2 The site in context

### The site

- 2.1 The site has pedestrian and vehicle access from Newberries Avenue, a minor residential public highway, and pedestrian access to the rear garden.

### Soil and levels

- 2.2 The 1:50,000 map of the British Geological Survey's *BGS Geology Viewer* indicates the local bedrock geology to be Lambeth Group – clay, silt and sand – with no recorded superfcials.
- 2.3 The on-line *Soilscape Viewer* by LandIS (The National Soil Resources Institute at Cranfield University) identifies the topsoil as slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils of moderate fertility.

### Visual amenity

- 2.4 Trees visible from a public place are considered to provide local 'public visual amenity' – effectively 'borrowed' or 'shared' landscape features that contribute to the particular character and pleasantness of the neighbourhood – and there is a preliminary presumption for retaining them, if they are in safe condition. The trees on the application site with public visual amenity are a *Thuja plicata* (thuya) hedge shown as H1 on the *Tree Constraints Plan* (drawing TCP 7750) and row of four *Ilex aquifolium* (holly) G2. Trees on adjoining land that are visible from a public place are the oak (*Quercus robur*) T3 in the garden of 46 Newberries Avenue and, to a very limited extent, a cherry plum in G4 at 44 Newberries Avenue.

### Statutory designations

- 2.5 No tree on the application site is covered by a tree preservation order. The oak T3 in the rear garden of 46 Newberries Avenue is protected by TPO/10/2006.
- 2.6 The site is outside any conservation area.

### 3 Tree inspection and tree constraints plan

#### Tree inspection and site assessment

- 3.1 My inspection was a visual tree assessment (VTA) of the above-ground parts of trees from ground level, following industry-standard procedures (see Appendix B). It was independent and impartial, and was not influenced by consideration of any development.
- 3.2 The results of the inspection are presented in two ways – a:
- schedule of my findings, shown in Appendix A of this report
  - *Tree Constraints Plan* (drawing TCP 7750).
- 3.3 The inspection schedule includes preliminary recommendations for the management of the trees regardless of the future use of the site. (These recommendations do not bind a tree owner.) Any additional or alternative management options needed because of the proposed development would be discussed in Section 4 of this report.

#### Quality/retention categories and their significance for the design

- 3.4 The inspection schedule and tree constraints plan shows 'quality/retention categories' based on criteria in the British Standard BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*.
- 3.5 The categories (and their Standard colours) are:
- **U** – unsuitable (shown in dark red) for retention beyond ten years, and possibly less, in relation to the current land use, irrespective of the planning application
  - **A** – high quality (shown in light green), with an estimated typical remaining life expectancy of at least 40 years
  - **B** – moderate quality (shown in mid blue), with an estimated remaining life expectancy of at least 20 years
  - **C** – low quality (shown in grey), with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.
- 3.5.1 The British Standard also suggests numerical subcategories to explain the reasons behind the quality/retention grading. They are:
- 1) mainly arboricultural qualities
  - 2) mainly landscape qualities
  - 3) mainly cultural/conservation values.
- 3.5.2 In practice the subcategories often overlap and some trees might warrant all three, but I have noted only one subcategory for each tree to indicate the main reason for my category grading.
- 3.6 These categories provide rule-of-thumb guidance on a local planning authority's (LPA's) likely priorities when considering safe trees in relation to development proposals.
- It is unlikely that the LPA would countenance the removal of a category A tree.
  - There is a presumption that category B trees will be retained wherever possible.
  - The retention or removal of category C trees is not usually considered to be a significant constraint on development. Trees with a small stem diameter – below 150mm – could be considered for relocation within a site, if desired.
  - Category U trees are graded as unsuitable because of safety considerations or other sound arboricultural reasons, irrespective of any development proposal, and are anticipated to live in a safe condition for only up to ten years.

#### My grading

- 3.7 I graded the trees:

- Category U – none.
- Category A – H1, T3, T5, T6.
- Category B – G2, G4.
- Category C – T7, T8, G9.

### Tree constraints plan

3.8 The *Tree Constraints Plan* shows most of the information derived from the tree inspection, together with other relevant matters:

- quality/retention category, given as a coloured circle representing the category grading in the position of the tree trunk
- indicative crown spread, shown in dark green
- minimum root protection area, shown in dark blue
- basic shading, based on BS5837:2012 criteria.

### Crown spread

3.9 The crown spread is a general indication of the current length of the branches based on estimates in four cardinal directions. Trees often grow unevenly, so the actual position of branches should always be taken into account when designing structures. The vertical constraint of the lowest significant branch is shown in the inspection schedule in Appendix A.

### Root protection areas

3.10 A circular root protection area (RPA), calculated from formulae in BS5837:2012, indicates the area around a tree containing theoretically sufficient roots and soil volume to keep the tree alive, healthy and upright: it is the area where the protection of roots and soil is treated as a priority.

3.11 Root protection areas shown on a tree constraints plan indicate the minimum area that should be left undisturbed and protected during demolition and construction. Even so, an RPA is a guideline and does not predict exactly where roots are growing. The actual pattern, depth and extent of root growth varies as a result of a wide range of factors, including the species and age of the tree, soil type, the presence of buildings and other structures and the surrounding environment. This means that a root protection area may be shown as a circle or polygon, depending on an arboricultural assessment of the circumstances.

## 4 Impact of the proposed development

### Tree removal

- 4.1 No tree would need to be removed to facilitate construction, so there would be no harmful impact on local landscaping or canopy cover.

### Tree work

- 4.2 Light pruning of a few narrow 'whippy' branches of oversailing plants in G9, growing at 50 Newberries Avenue, might be needed to facilitate construction. This work is desirable irrespective of the development scheme and would not result in any long-term harm to the overgrown and congested plants.

### Tree crowns and future pruning

- 4.3 The proposed development could slightly *decrease* the demand to prune the neighbouring plants in G9, so might reduce the extent or frequency of desirable pruning.

### Below-ground impact

- 4.4 The proposed extension adjacent to the south-western boundary and the neighbouring trees in G4 could intrude on less than 6 per cent (about 1m<sup>2</sup>) of the theoretical circular root protection area of G4 where roots can be expected to be small so that their loss, if necessary, could be tolerated.
- 4.5 Even so, as a precautionary measure, a trial trench could be dug by hand to establish and record the position and size of any roots, if present. The type and position of the foundations could then be designed to prevent damage to any roots of 25mm diameter or greater if there are indeed any present on the application site.

### Service trenches

- 4.6 Utilities could be connected from existing services within the existing house and no new service trenches are envisaged at this stage. If new trenches were in fact needed, they could be positioned outside root protection areas.

### General tree protection

- 4.7 A short stretch of temporary ground protection adjacent to the trees in the neighbouring G4 might be needed to supplement the existing hard surface. If so, it should be specified according to the type and frequency of foot and other traffic along the side passageway.
- 4.8 Other standard tree protection measures, such as protective fencing, would be needed during construction.

### Shading

- 4.9 Shading by the trees mentioned in this report does not constrain development.

## 5 Conclusions

- 5.1 No tree would need to be removed to permit development so there would be no adverse impact on local landscaping value or canopy cover.
- 5.2 Minimal pruning of some overgrowing neighbouring vegetation might be needed to facilitate construction. The pruning is needed in any event and would not cause any long-term damage.
- 5.3 There is a very minor theoretical incursion into the root protection area of one group of neighbouring trees, where roots can be expected to be very small if present at all and their loss, if necessary, could be tolerated. However, a precautionary trial trench could be dug by hand to ascertain the presence or absence of roots and to design the type and position of the foundations around them if needed.
- 5.4 Standard protective tree measures, such as protective fencing, would be needed during development.
- 5.5 If adequate precautionary and protective measures were employed, it should be possible to develop the proposed scheme without long-term harm to trees.



# APPENDIX A – TREE INSPECTION

## Key to inspection schedule

### Tree number on plan

- T1, T2 etc – individual tree  
G1, G2 etc – group of trees

### Stem

The measurement is the stem diameter at 1.5m above ground level for single-stemmed trees, unless stated otherwise, or the equivalent calculated stem diameter for multi-stemmed trees based on one of the two formulae for multi-stemmed trees in the British Standard BS5837:2012.

### First significant branch

The height above ground level and direction of the first significant branch, which might be higher or lower than the mass of other leaves.

### Life stage

- New – Sapling or newly established tree, growing vigorously if healthy. Usually easy to transplant and re-establish.
- Y – Young: still in the first third of typical life expectancy for the species and conditions. Growing vigorously, if healthy, but not necessarily yet producing seed. Possibly some scope for transplanting and re-establishing.
- EM – Early-mature: producing seed, but not necessarily at full height or spread.
- Mat – Mature: at or approaching full size and in the second or final third of typical life expectancy for the species and conditions. Annual growth gradually reducing.
- OM – Old-mature: old for the species and/or conditions and probably showing very low annual growth and possible decline. Might also be described as a veteran tree, and may have special biological and ecological conservation value.
- Vet – Veteran: a tree of special biological and ecological conservation value, cultural or aesthetic value (or all three). Often, but not necessarily, older than the typical age range for the species. Younger trees might also qualify as a veteran because of features, such as a trunk cavity, that provide high wildlife/conservation value.
- Anc – Ancient: an especially old tree with features of old mature and veteran trees, which is likely to be of high biological and ecological conservation, cultural and aesthetic value.

### Remaining years, in age bands

<10, 10-20, 20-40, or more than 40

### Physiological or structural condition

Normal (physiological) or Good (structural) – no significant health problems or structural problems.

- Fair – Some symptoms of ill health, or currently insignificant or remediable structural problems.
- Poor – Significant symptoms of ill health, or significant structural problems.
- Senescent – Negligible annual growth.
- Moribund – In serious and irreversible decline.
- Dead – No physiological function.

### BS 5837:2012 Category of quality/retention

- U – Tree unsuitable for retention irrespective of the planning proposal.
- A – High quality and value, to be considered for retention.
- B – Moderate quality and value, to be considered for retention.
- C – Low quality and value, or a young tree, which might be considered for retention.

### BS 5837:2012 Criteria for category of retention

1. – Mainly arboricultural value.
2. – Mainly landscape value.
3. – Mainly cultural value, including conservation.

### Other abbreviations

- e – estimated.
- hcv – high conservation value
- oi – measurement taken over ivy or other climber, or over basal shoots.
- rf – root flare (base of the tree).
- ms – multi-stemmed.
- prov – provisional.
- N – north.
- E – east.
- S – south.
- W – west.

## Inspection schedule

| Tree<br>ident<br>on<br>plan | Species  | Approx<br>height<br>in m | Stem<br>diam-<br>eter or<br>calc-<br>ulated<br>equiv-<br>alent<br>in mm | Approx branch radius in m |          |          |          | Canopy<br>height<br>above<br>ground<br>level<br>in m | First<br>signif-<br>icant<br>branch<br>height<br>in m<br>& direct-<br>ion | Life<br>stage | Physio-<br>logical<br>condition | Structural condition                                     | General observations and<br>preliminary<br>recommendations | Est.<br>remain-<br>ing<br>contrib-<br>ution in<br>years | Cat-<br>egory<br>grading | Min<br>circ-<br>ular<br>RPA<br>radius<br>in m |
|-----------------------------|--|--------------------------|---|---------------------------|----------|----------|----------|--|---|---------------|---------------------------------|--|--|---|--------------------------|---|
|                             |  |                          |   | N                         | E        | S        | W        |  |   |               |                                 |  |  |   |                          |   |
| H1                          | <i>Thuja plicata</i> cv.<br>variegated<br>thuya/western<br>red cedar   | 2.3                      | 85  | 1.5                       | 1.5      | 1.5      | 1.5      | 0.2  | 0.2 SE  | Mat           | Normal                          | Good   | Maintain current<br>pruning cycle.                         | >40   | A1                       | 1.0   |
| G2                          | 4 <i>Ilex aquifolium</i><br>holly  | 5.2                      | 180   | 2                         | 2        | 2        | 2        | 2.1  | 1.8 E   | Mat           | Fair: small<br>crowns           | Fair-good  | None   | 20-40   | B2                       | 2.2   |
| T3<br>off<br>site           | <i>Quercus robur</i><br>common/english<br>oak  | 20                       | 750e  | 4.5<br>e                  | 4.5<br>e | 4.5<br>e | 4.5<br>e | 6e   | -   | Mat           | Normal,<br>so far as<br>visible | Good, so far as visible                                  | None   | >40   | A2                       | 9.0   |
| G4<br>off<br>site           | Mixed species<br>including <i>Prunus<br/>cerasifera</i> ,<br><i>Fagus sylvatica</i><br>and <i>Ilex<br/>aquifolium</i><br>cherry plum,<br>beech and holly | 9.5                      | 190e  | 1.4<br>e                  | 1.4e     | 3e       | 3e       | 2.5  | 2 NE  | Mat           | Fair, so far<br>as visible      | Fair-good, so far as visible                             | None   | 20-40   | B2                       | 2.3   |
| T5                          | <i>Cedrus atlantica</i><br>Atlas cedar   | 12.8                     | 240e  | 4.5<br>e                  | 4.5<br>e | 4.5<br>e | 4.5<br>e | 2.5e   | 2.5e  | EM            | Fair, so far<br>as visible      | Fair-good, but ivy appears<br>to be growing in to crown. | None   | >40   | A2                       | 2.9   |
| T6                          | X <i>Cuprocyparis<br/>leylandii</i><br>Leyland cypress   | 10.9                     | 250   | 3                         | 3        | 3        | 3        | 2.5  | 2.5   | Mat           | Normal,<br>so far as<br>visible | Fair-good, so far as visible                             | None   | >40   | A2                       | 3.0   |
| T7<br>off<br>site           | <i>Larix</i> sp.<br>larch  | 21.7                     | 700e  | 8.8<br>e                  | 7.8      | 7.9      | 8.8      | 6.5  | 6.5 S   | Mat           | Normal,<br>so far as<br>visible | Fair-good, so far as visible                             | None   | 10 -20  | C1                       | 8.4   |
| T8<br>off<br>site           | <i>Thuja plicata</i><br>cv.<br>thuya/western<br>redcedar   | 8.1                      | 180e  | 2.5<br>e                  | 2.5<br>e | 2.5<br>e | 2.5e     | 2e   | 2 S   | Mat           | Poor                            | Fair: growing close to<br>outbuilding                    | None   | 10 -20  | C1                       | 2.2   |

| Tree ident on plan | Species  | Approx height in m | Stem diameter or calculated equivalent in mm | Approx branch radius in m |    |    |    | Canopy height above ground level in m | First significant branch height in m & direction | Life stage | Physiological condition | Structural condition                                       | General observations and preliminary recommendations                      | Est. remaining contribution in years | Category grading | Min circular RPA radius in m |
|--------------------|--|--------------------|--|---------------------------|----|----|----|---------------------------------------|--|------------|-------------------------|--|---|--------------------------------------|------------------|------------------------------|
|                    |  |                    |  | N                         | E  | S  | W  |                                       |  |            |                         |  |   |                                      |                  |                              |
| G9 off site        | Congested group of plants, many with extended 'whippy' growth, including elder and cotoneaster | 5.6                | 100e   | 3e                        | 3e | 1e | 3e | 2e                                    | 2  | EM         | Fair, so far as visible | Fair, so far as visible. Oversailing application property. | Prune back oversailing branches to the boundary line to prevent nuisance. | 10 -20                               | C1               | 1.2                          |

## APPENDIX B – SCOPE

1. This report and its associated *Tree Constraints Plan* are based on arboricultural criteria only. Comments and drawings relating to non-arboricultural matters must be viewed as provisional and referred to appropriate specialists for confirmation and specification.
2. The tree condition survey was a visual tree assessment (VTA) from ground level, following industry-standard procedures, based largely on the principles described in *The body language of trees – A handbook for failure analysis*, by Claus Mattheck and Helge Breloer, and *Principles of Tree Hazard Assessment and Management*, by David Lonsdale. This was an independent and impartial assessment of the condition of the trees and was not influenced by consideration of any potential development scheme. There was no invasive investigation of trees, such as by boring, and no branch, leaf, fruit or root samples were collected for laboratory analysis. No survey was made of water bodies, drains or drainage systems.
3. The information from the British Geological Survey and LandIS provide a general indication of soils in the area, but no reliance should be placed on them for the application site, as actual soil composition can vary over short distances.
4. Trees are dynamic and sometimes unpredictable organisms. They change as they mature and decline, change in response to changing conditions around them (including weather), or change for reasons that research has not yet fully explained. The tree inspection schedule in Appendix A deals with the tree's condition observed on the day the inspection.
5. Any legally permitted tree work undertaken must take full account of wildlife and habitat protection legislation and tree phenology (natural cycle). Tree work should be carried out to modern arboricultural standards, as recommended in British Standard BS3998:2010 *Tree Work – Recommendations*.



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