



bawden
tree care

BS5837 2012 Trees in Relation to Design, Demolition and Construction

At

63 Elm Road
Earley
Wokingham
RG6 5TR

Date of report
5th June 2024

Revision 2

Report by

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Summary

The report has been written following the recommendations and guidance given within British Standard 5837 (2012), Trees in relation to design, demolition, and construction. to provide a reasoned assessment of the potential impact to trees by the proposed development at 63 Elm Road, Earley, Wokingham, RG6 5TR.

Four trees to be retained have been identified which may be adversely affected by development, if reasonable care is not taken to protect the trees and their rooting systems.

Two trees have been identified for removal to facilitate the development.

Glossary

Term	Meaning
RPA	Root Protection Area
CEZ	Construction Exclusion Zone
BS5837:2012	British Standard for trees in relation to demolition, design, and construction
BS3998:2010	British Standard: tree work recommendations
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
TPP	Tree Protection Plan

Revisions made to document:

- Points 5.1.6 & 5.1.7 have been amended.

Revisions made 11/06/24

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APPENDIX A – TREE INVENTORY

**APPENDIX B – SITE PLAN SHOWING RPAs, APPROXIMATE CROWN
SPREAD & CONSTRAINTS PLAN**

APPENDIX C – TREE PROTECTION PLAN

1 Introduction

- 1.1 On instructions received from Ms Shirley Philips, of Michael Jones Architects, Michael Clements, Arboricultural Surveyor for Bawden Tree Care, undertook a ground level, visual assessment of the trees that could be affected by the development proposal in accordance with BS5837 2012, and best practice, and to prepare the following to accompany a planning submission: -
 - A schedule of the relevant trees to include survey data and a condition assessment.
 - An appraisal of the constraints imposed by the trees and the potential consequences for the local amenity.
 - An Arboricultural Method Statement setting out appropriate protective measures and management for trees to be retained.
- 1.2 Each tree has been given a class rating and Root Protection Area (RPA) measurement worked out using the recognised method detailed within BS5837 2012. BS5837 2012 Tree Quality Assessment Definitions are given in section 2.6 of this report.
- 1.3 For the purposes of this survey, a drawing of the site, adapted from drawing by Michael Jones Architects, has been included to show tree locations, IDs, categories, and locations of required protective measures, (see Appendix C).
- 1.4 All trees of material consideration within and immediately adjacent to the proposed development site have been inspected. These trees are listed at Appendix A and annotated on the Tree Plan at Appendix C.

Methodology

- 1.5 The Arboricultural site survey was carried out on the 17th May 2024. Weather conditions at time of inspection were sunny with clear skies.
- 1.6 All observations were carried out from ground level without detailed investigations. Tree stem diameters, tree height and crown spread have been measured unless otherwise indicated.
- 1.7 This report is prepared in line with the British Standard: BS5837:2012 - Trees in Relation to Demolition, Design and Construction. The purpose of the report is to provide Arboricultural information and recommendations for the support of the proposed development at 63 Elm Road, Earley, Wokingham, RG6 5TR.
- 1.8 The British Standard makes provision for trees to be categorised for both quality (A, B, C or U) and a sub-category for each of 1, 2 or 3. Details of these categories are included in paragraphs 2.6.
- 1.9 A full description of the trees found, and their categories, is included in the tree survey data provided in Appendix A. The data table includes stem diameter

measured from 1.5m above ground level for single stemmed trees, stem diameter measured above root flare for multi-stemmed trees, height, crown spread, age class, and physiological and structural condition. A tree quality assessment using the data is then formulated to categorise trees for removal or retention.

- 1.10 Stem diameters are used to calculate the root protection areas (RPAs), which have been plotted and adjusted for site features, (see Appendix B). The RPA is the area in which most tree roots are anticipated to be growing. As root damage is a common cause of tree loss, the RPA is an area of provisional exclusion for construction activity.
- 1.11 Trees are a material consideration in the planning process and, as such, must be included as part of the decision-making process.

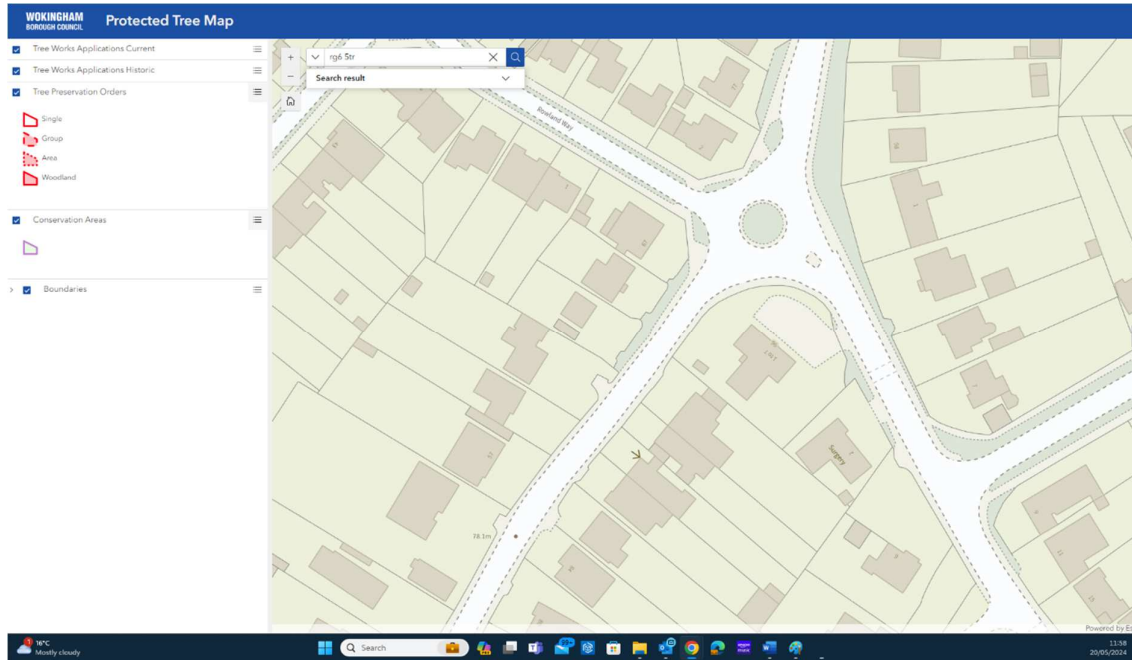
Caveats and limitations

- 1.12 The purpose of this report is to determine any constraints that need to be considered in relation to trees – both above and below ground – during the development design, to assess the potential impact of the development to the amenity value of trees, and to provide an Arboricultural Method statement with Tree Protection Plan in order to minimise, as far as is practical, damage to trees and their rooting systems.
- 1.13 Only trees with greater than 75mm diameter and woodland groups with stems of 150mm or greater are included in the survey.
- 1.14 Root protection areas are calculated in line with BS5837:2012 and are adjusted to reflect topographical constraints on site. This is based on professional experience and has not been confirmed by trial pitting. There is a level of unpredictability in calculating exact tree root locations and therefore, where there is a possibility of obstruction or damage to roots, trial holes are recommended prior to construction.
- 1.15 The Arboricultural Method Statement outlined in section 5 of this report must be agreed with planning before the commencement of any works.
- 1.16 Trees are living organisms whose health and overall condition can change rapidly. The conclusions and recommendations contained within this report are valid for a period of twelve months. The period of validity may be reduced if significant changes occur to either the trees or to the landscape within the immediate proximity of the trees.

2 Arboricultural survey summary

- 2.1 The proposed development is to a detached dwelling, located along a residential road within a suburban area.

Tree Preservation Orders and other legal restrictions



- 2.2 There are no TPO's on or near to the site and the site is not located within any conservation area. As confirmed on the Wokingham Borough Council online map.
- 2.3 Reasonable care should always be taken not to damage trees to be retained.

Arboricultural survey

- 2.4 For tree survey information, see the Tree Survey Data in Appendix A.
- 2.5 Smaller trees and understory vegetation adjacent to the site have not been included as part of this Arboricultural report.
- 2.6 Trees are categorised in line with BS5837:2010 Trees in Relation to Design, Demolition and Construction as follows:

Table 1: Tree categories in line with BS5837:2010

A	Trees of high arboricultural value that should be retained and protected throughout the development. Veteran trees are automatically awarded 'A' status.
B	Retention preferable. Trees of good condition and character which are appropriate for the location and in good physiological and structural condition. These trees should be retained unless they will be a severe impediment to the proposal or there is an overriding public interest that warrants their removal.
C	Trees of generally lower arboricultural value by dint of character or condition. 'C' trees should not be a constraint on development.
U	Trees that should be removed on arboricultural grounds. Often trees in poor condition can be left 'in situ' until a proposal means the potential target increases, making their removal more urgent or necessary.

Trees are further categorised into sub-categories, using a numerical suffix to denote the following perceived values:

Table 2 Tree sub-categories in line with BS5837:2010

1.	Trees of primarily arboricultural qualities. High value trees might be because they are particularly good examples of their species, because they are rare or unusual or because they are important components of a group feature such as an avenue.
2.	Trees of landscape importance – for example, trees of particular visible importance in a setting or view.
3.	Trees of cultural value. This may be due to historic links or conservation value – such as veteran trees or commemorative trees.

For example, a veteran tree of landscape importance would be categorised as A2.

An overview of details of the trees surveyed is included in Appendix A – Tree Survey Data.

3 The proposal

- 3.1 Two storey side extension, single storey front extension, single storey rear extension and alterations to the front driveway/garden.

4 Tree impact assessment

- 4.1 Trees to be retained adjacent to the development area, are unlikely to be adversely affected, provided that adequate precautions to protect the trees are implemented through the Arboricultural Method Statement outlined in section 5 of this report.

- 4.2 The proposal has the potential to damage the following trees and groups:

Impact	Reason	High value A class Trees	Moderate Value B class Trees	Low Value C Class Trees	Trees for Removal / U class trees
Trees to be removed	To facilitate build	-	-	T02, T03	-
Retained trees that may be damaged through disturbance to RPAs	Removal of existing surfacing/ structures/ Landscaping/ Installation of new surfacing/ structures/ landscaping	-	T01	-	-
Retained trees to be pruned	Crown raising away from proposed building	-	-	-	-

Impact Appraisal

- 4.3 The proposed alterations are not expected to have a significant impact on any of the trees to be retained, as long as the construction works are carried out with due care to the trees and their rooting systems. This is of particular importance with regards to the proposed alterations to the driveway/front garden as these proposed works encroach the RPA of T01 and will require supervision to ensure that the rooting zone is protected and no significant roots are damaged during construction.
- 4.4 There is adequate clearance between trees to be retained and the proposed extension work. These works should not directly affect any trees to be retained however associated construction activities will need to be carried out with due care for the adjacent trees as to avoid any detrimental impact.
- 4.5 There is the potential for the roots of the trees to be retained to be damaged during the proposed development. This could occur either through direct mechanical damage or through compaction from vehicles/plant or storage of materials. Damage can also occur through contamination from spillages from mixing areas.
- 4.6 The proposed development shall not have a detrimental effect on trees to be retained as long as the method statement in section 5 of this report is adhered to.

5 Arboricultural Method Statement

5.1 Summary of recommendations

- 5.1.1 A copy of this AMS and the related TPP is to be retained on site at all times and all personnel associated with the construction process will be made familiar with the principles within.
- 5.1.2 A system of site monitoring by an arboriculturist is to be undertaken. This will include a pre-start meeting to ensure that all protective measures have been implemented correctly. Site inspections during construction to check continued adherence with this method statement and tree protection plan (TPP). End of construction inspection to check all materials have been removed from site and identify the need for any remedial actions where necessary. A monitoring record sheet is included at the end of this method statement.
- 5.1.3 To provide sufficient space on site for storage of materials and vehicle parking it will be necessary to complete the extension/widening of the driveway as a first priority, at least up to step IV of point 5.1.5 below.
- 5.1.4 All proposed works to the driveway must be completed under arboricultural supervision. This is to ensure all works are carried out in the correct manner, maintaining machinery outside of RPA's, utilising hand tools only within RPA's, ensuring that no areas of RPA are left exposed and that all precautions are taken to avoid damage to roots and their environment.
- 5.1.5 Works to the driveway to be completed in the following order;
 - I. Remove T02 and T03 prior to any works on site.
 - II. Remove existing retaining wall.
 - III. Excavate area for widening of driveway.
 - IV. If preferable install temporary surfacing to excavated area to be used for storage and parking during construction otherwise go to next step.
 - V. Install new retaining wall, hand dig section of foundation that encroaches RPA and use a non-permeable liner to prevent contamination of rooting zone by the alkaline leachate of wet concrete.
 - VI. Remove existing surfacing from driveway, starting at the furthest north point working towards the road, minimising exposure of RPA and avoiding the need to move machinery or people over an unsurfaced RPA. There must be no excavation into the ground level within the RPA other than the removal of the existing surfacing layer, which must be completed using hand tools only.
 - VII. Temporary protective surfacing must be used to protect the unsurfaced exposed RPA until the new surfacing is installed. Time between removing existing and installing new to be kept to a minimum and ideally completed within the same day.
 - VIII. New surfacing to be completed in a rollout manner, starting from the road working towards the house, creating a protective surfacing layer to work from.

- IX. New surfacing within RPA must be of a no dig type. Permeable paving has been suggested by the client for the new surfacing, in this case a cellular confinement system must be used as the substrate for the finishing block paving layer.
 - X. There must be no compaction of any kind within RPA's.
- 5.1.6 Two areas have been designated as construction exclusion zones in the tree protection plan. This is to protect the trees to be retained. Due to the nature of the site and the proposed works, full specification protective fencing as typical for tree protection has not been deemed appropriate in this case. Instead a simple barrier of road pins and orange rope (or similar) with appropriate signage to indicate these areas on site will be sufficient. Location of barriers is indicated on the TPP with a dashed orange line.
- 5.1.7 The extension to the rear of the property is located outside of any RPA's however, it is still important that no activities encroach the adjacent CEZ, for the protection of T04, T05 & T06.
- 5.1.8 All protective measures must be installed as stated in this method statement and in the tree protection plan.
- 5.1.9 Protective measures shall remain in place for the entire development phase and until all equipment, machinery and surplus materials have been removed from the site. Such measures shall not be removed or breached during construction operations. Unless stated otherwise in this method statement or agreed otherwise with the project arboriculturist.
- 5.1.10 Care should be taken when carrying out any excavations to ensure no significant roots are damaged. This includes by direct mechanical damage, or through compaction caused by plant movement, storage of materials, or contamination from spillages etc. during the building process.
- 5.1.11 In the unlikely event that tree roots are damaged by the development, exposed roots should be treated at once to avoid desiccation. Any roots smaller than 25mm in diameter, can be pruned back, preferably to a side branch, with suitable sharp pruning tools.
- 5.1.12 If significant roots are uncovered that cannot be pruned without detrimental effect to the tree, works in this area should cease and a new design and method statement should be agreed with planning before works may continue in this area.
- 5.1.13 Facilitation pruning is not required in this case.
- 5.1.14 There is no known need for the installation of new service runs within the RPAs of any trees to be retained. If services do need to be installed within the RPAs a method statement should be prepared and written approval obtained from the planning department before any works are carried out.

- 5.1.15 The extents of any site storage and mixing areas must not be near any Root Protection Area to prevent the risk of tree roots being damaged from the storage of materials, runoff/spillages etc. during the building process.

ARBORICULTURAL SITE MONITORING RECORD

35 Pilgrims Way, Reigate, RH2 9LG.

PURPOSE OF VISIT	TIMING	PERSONNEL PRESENT	OBSERVATIONS AND RECOMMENDATIONS	COMPLETE Y/N
1. Check Tree Protection is installed as per AMS & TPP prior to the commencement of works. Meeting with site manager to run-through AMS and ensure understanding of its contents.	Pre-commencement			N
2. Monitoring site visits by approved Arboriculturist to ensure continued compliance with AMS. Supervise and advise on works as stated in AMS.	During Construction			N
3. Final completion inspection and identification of any remedial actions	Completion of scheme			N

Contacts			
Council Tree Officer:	[Name]	[Telephone]	[Email]
Site Manager:			
Arboriculturist: (BAWDEN TREE CARE)			
Project Agent:			

Notes:
[Inspector's comments and relevant information]

Common causes of Tree Death

