

BS5837:2012

Arboricultural Impact Assessment

London Lodge
Bedwell Park, Essendon
Herts, AL9 6HY

Written by: Tom Grayshaw
BA (Hons) Tech Cert (ArborA) Dip Arb L6 (ABC) MArborA

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1. Introduction

- 1.1. This report provides an arboricultural impact assessment of the proposed development for Essendon Property Ventures Ltd at London Lodge, Bedwell Park, Essendon, Herts, AL9 6HY in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 1.2. This Arboricultural Impact Assessment is based on the proposed layout by Chassay Studios 'Site Layout Plan' reference 1714-SK-2023.09.05-02. The proposed layout is shown on the Tree Protection Plan reference TGA.2552.TPP.002.
- 1.3. The proposed development is for an extension and refurbishment of the existing house, and a new driveway entrance.
- 1.4. A survey was carried out in accordance with BS5837 to identify the constraints and opportunities on the site presented by the existing trees reference TGA.2552.TreeSurvey.
- 1.5. For details of the trees to be retained and tree protection proposed, reference should be made to the Tree Protection Plan reference TGA.2552.TPP.002.
- 1.6. No details have been supplied or sought of any statutory protection which may cover the subject trees.
- 1.7. According to a search of the Welwyn Hatfield Borough Council online mapping service on 17th May 2023 there are no TPOs at the site, and the site is not within a conservation area.
- 1.8. The controlling authority is Welwyn Hatfield Borough Council who can be contacted at: www.welhat.gov.uk.

2. Arboricultural Impact Assessment

- 2.1. The proposed development is for an extension and refurbishment of the existing house, and a new driveway entrance.
- 2.2. This impact assessment is of the effects of the proposed development on the existing trees. Where required, mitigation measures are proposed in the Arboricultural Method Statement and Tree Protection Plan to reduce or avoid impact, as recommended in BS5837:2012 section 5.4.

2.3. Evaluation of impact of proposed tree removal

- 2.3.1. The following trees are proposed for removal, as indicated on the Tree Protection Plan reference TGA.2552.TPP.002:
- 2.3.2. T8 – Holly – C2. This is a small twin stem tree with stem diameters of 100mm. The tree is 5m in height, and not significant in the wider landscape. The tree is not of a quality that should be considered a constraint to development, and its removal is considered entirely acceptable in arboricultural terms.
- 2.3.3. G12 – Lawson Cypress – C2. This is a 1.5m high formally kept conifer hedge. A section is to be removed to allow for construction of the proposed driveway. The hedge has been planted to serve the purpose of providing a boundary screen in its current context. With this context changing the full length of the hedge screen is no longer required, meaning removing a section to form the new driveway entrance is acceptable.
- 2.3.4. The trees proposed for removal and the section of hedge proposed for removal are C category and not of a quality that should present any constraint to development of the site. There is ample scope for replacement planting of trees as mitigation for their removal.

2.4. Trees to be pruned

- 2.4.1. The G7 group will require pruning back as indicated on the tree protection plan. The group comprises mainly laurel, and the level of pruning required is well within the limits of good arboricultural practice. Excepting this work, the proposals are such that no tree surgery will be required to allow for construction.
- 2.4.2. In the event that any further tree surgery works are required during the development, these must be specified clearly by the project arboriculturist and approved by the council before being carried out. Any proposed work must comply with BS3998:2010 'Tree Work'.

2.5. Protection for retained trees

- 2.5.1. BS5837:2012 section 6.2.1. states: 'All trees that are being retained on site should be protected by barriers and/or ground protection before any

materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed'.

- 2.5.2. The Tree Protection Plan indicates tree protection fence and/or ground protection which will ensure the protection of all retained trees on site in accordance with this recommendation. The existing driveway will be used for construction access, and the existing tarmac surface is to be retained in situ to act as ground protection throughout the development. This will ensure there is no impact within RPAs as there will be no difference to the current use.

2.6. Permanent Hard Surfacing within the RPA

- 2.6.1. The construction of the proposed driveway at the north west of the site encroaches slightly into the RPAs of adjacent retained trees. This encroachment has been measured accurately in AutoCAD as being T9 - 14%; T10 - 13%. It is felt that the incursions are at a level where, as young trees, any impact will be low, and their retention is viable. The trees are relatively low-quality C category trees, and not of a quality that should represent any constraint to development in arboricultural terms. I.e. whilst it would be acceptable to remove the trees, it is proposed that the trees are retained, despite the incursion into the RPAs.
- 2.6.2. It is recommended that a precautionary approach is taken however, with excavation within the RPAs carried out by hand, to minimise damage to any root damage, as per the method statement below, and under arboricultural supervision.

2.7. Construction within RPAs

It is confirmed that the proposed extension to the existing building entails no construction within the RPAs of retained trees.

2.8. Shade and future pressure to prune

- 2.8.1. The relationship between the proposed extension and retained trees is sustainable in terms of shading and proximity. Due to the site use and layout remaining broadly similar to the existing, it is considered unlikely that there will be unreasonable pressure to prune trees from future occupants.
- 2.8.2. In the event future residents to wish to prune the existing trees to improve sunlight and daylight, any proposed works can be carried out in accordance with best industry practice as per BS3998:2010 'Tree work - Recommendations'. Maintenance to prune trees next to houses is not unreasonable in urban settings, which is one of the reasons the

aforementioned document exists. The standards set out in BS3998 are described to ensure that trees are pruned without disfigurement.

2.9. Underground utilities

No changes to services are proposed to the existing services as a result of the development.

2.10. Boundary treatments within RPAs

It is acceptable for fencing and boundary treatments to be located within root protection areas of retained trees, subject to being positioned and installed to avoid damage to tree roots as per the method statement section provided below. All post holes must be excavated using hand tools only within RPAs. Post holes must be lined with a non porous membrane if concrete or post mix is used to stop concrete leaching into the surrounding soil.

2.11. Conclusion

This report concludes that the development proposals are in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

3. Arboricultural Method Statement

3.1. Tree Protection Plan

- 3.1.1. Reference must be made to the Tree Protection Plan reference TGA.2552.TPP.002.
- 3.1.2. The Tree Protection Plan indicates the trees required for removal, with a red dashed canopy outline (see section below).

3.2. Tree protection fencing

- 3.2.1. The position for the tree protection fence is indicated on the Tree Protection Plan drawing number TGA.2552.TPP.002.
- 3.2.2. The Tree Protection Fence must be installed as follows:
 - 1) The tree protection fence must be installed before any demolition, groundworks or construction take place.
 - 2) The tree protection fence must be installed in the position shown on the approved Tree Protection Plan, and not estimated.
 - 3) The position of the tree protection fence must be set out by a surveyor if required, with node points marked clearly on site for the fencing contractor to work to using wooden pegs.
 - 4) The tree protection fence must be installed as per the specification given below. Any variation to the specification must be approved by the council.
 - 5) The position of the tree protection fence is approved as part of the planning permission and must not be moved once installed.
 - 6) The tree protection fence must comprise of 'Heras' type wire mesh panels on boots, clamped together with two metal clamps between panels.
 - 7) Each panel must be secured (with galvanised wire or strong cable ties) to a scaffold pole upright driven firmly into the ground.
 - 8) All weather notices must be fixed to every second panel stating, 'Tree Protection Fence - Keep Out'
- 3.2.3. Once installed, the tree protection fence must remain in place whilst any demolition, groundworks and construction take place.
- 3.2.4. Once construction is finished, the tree protection fence may be removed to allow soft landscaping to take place.
- 3.2.5. The specification for the tree protection fence is given on the Tree Protection Plan. If an alternative specification for the fence is to be used, this must first be approved by the council.

3.3. Phasing of works in relation to tree protection

3.3.1. Works on site must be carried out in the following order:

- 1) Tree removals
- 2) Tree protection fence installed
- 3) Site clearance
- 4) Construction of driveway under supervision by arboriculturist
- 5) Construction
- 6) Removal of tree protection fencing
- 7) Soft landscaping

3.3.2. The above phasing must not be changed without approval from the project arboriculturist and Council.

3.4. Restrictions within tree protection areas

3.4.1. The purpose of the tree protection fence is to prevent damage to retained trees from following causes:

- Damage to the main trunk, branches and foliage
- Roots being severed as a result of excavation
- Root damage from soil compaction
- Chemical damage

3.4.2. The following restrictions therefore apply within the areas protected by the tree protection fence unless otherwise specified within this report:

- 1) No movement of vehicles or plant machinery
- 2) No excavation
- 3) No hand digging
- 4) No raising or lowering of levels for any reason
- 5) No storage of plant or materials
- 6) No fire lighting such that flames come within 5m of tree foliage.
- 7) No substances injurious to tree health to be used or stored, including fuels, oil, bitumen, cement washings, builders sand, concrete mixing and other chemicals
- 8) Care must also be taken with site operations outside of the fenced off areas to ensure that wide or tall loads, or plant with booms, jibs and counterweights etc. do not cause damage to tree canopies.

3.5. Arboricultural supervision

- 3.5.1. Arboricultural supervision is required from the project arboriculturist for the installation of the new driveway.
- 3.5.2. The arboricultural supervision will comprise the following:
- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
 - 2) Supervision will require the project arboriculturist to be present throughout the task.
 - 3) If the task is to take a long period of time, provided the arboriculturist is satisfied, and after an initial 'tool-box talk', the supervision may be reduced to telephone contact between the site foreman/contractor and arboriculturist.
 - 4) Written record of supervision to be provided by project arboriculturist (with photo evidence if appropriate) suitable to be sent as a record to the local authority.

3.6. Site operations

- 3.6.1. Provisions will be required for site operations such as working access, materials storage, contractor parking, welfare facilities, temporary services/drainage etc.
- 3.6.2. Site operations must be designed to avoid the areas designated as tree protection, with none of the above provisions sited within RPAs of retained trees, with the exception that they may be located within those portions of the RPAs of retained trees that are already paved with tarmac or concrete - please refer to the Tree Protection Plan reference TGA.2552.TPP.002. Tree protection fence must not be moved to accommodate site operations.
- 3.6.3. If the requirement for working space or temporary construction access is unavoidable for any reason, any alterations to the tree protection plan must be approved by the project arboriculturist.

3.7. Ground Protection (existing hard surface)

- 3.7.1. In the hatched area indicated as 'Ground Protection' on the tree protection plan reference TGA.2552.TPP.002, there is existing hard surface in the form of tarmac driveway.
- 3.7.2. This must be retained to act as temporary ground protection during construction, rather than being removed.
- 3.7.3. There is to be no-excavation within ground protection area whatsoever. This includes installation of services and associated utilities.

3.8. Tree surgery and removal

- 3.8.1. The trees proposed for removal are indicated on the Tree Protection Plan reference TGA.2552.TPP.002. If required, it is recommended that trees are identified for removal by the project arboriculturist using marker paint.
- 3.8.2. Any further tree surgery works required during the development must be approved by the Local Planning Authority before being carried out.
- 3.8.3. All work will be carried out in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Council.
- 3.8.4. It is the sole responsibility of the instructed arboricultural contractor to ensure that correct health and safety planning for any proposed works is identified and managed prior to commencement of proposed works. All risks associated with the work should be identified by carry out a site-specific risk assessment and managed by the use of appropriate safe working procedures.
- 3.8.5. The statutory protection afforded by the Wildlife and Countryside Act and Countryside and Rights of Way Act must be adhered to. If further advice is required, particularly if bats are discovered during tree work, Natural England or a competent ecologist must be contacted.
- 3.8.6. According to the Arboricultural Association: When tree or vegetation clearance work has to be undertaken during the nesting season, a pre works survey needs to be carried out by a suitably competent person. As a general rule, it should be assumed that birds will be nesting in trees, and contactors have the responsibility to assess, record and confirm that any works carried out in the management of trees and other vegetation has not disturbed actively nesting birds.
- 3.8.7. The stumps of trees marked for removal located within the RPAs of retained trees must be either cut flush to ground level and left in situ, or ground out using a stump grinder. Stumps must not be winched out as this damages the roots of retained trees.
- 3.8.8. All tree works and tree surgery must be carried out such that damage to retained trees is avoided. Retained trees must not be used as the anchor point for winching.

3.9. Soft landscaping within RPA

3.9.1. All landscaping and associated ground preparation within exclusion zones will be carried out sensitively to ensure root damage is mitigated as much as is practicable.

3.9.2. Turfing

- 1) Remove tree protection fence to allow access to work area
- 2) No plant or other machinery to be used within tree protection area
- 3) Any existing vegetation to be removed using hand tools only
- 4) Prepare ground using hand tools only
- 5) If required import good quality top-soil to lay turf on using wheelbarrow, or plant located outside of protected area.
- 6) Import turves by hand in wheelbarrow
- 7) Lay turves as per recommended practice

3.9.3. Planting

- 1) Dig individual planting pits for each plant by hand (including hedging which must not be trench planted)
- 2) When digging holes for planting, no damage must occur to tree roots, with all roots to be protected and retained.
- 3) New trees/shrubs planted carefully by hand importing compost into the planting holes as required.
- 4) Any mulch to be imported and spread by hand.
- 5) No works will be carried out within any protected areas if the soil moisture is of a level likely to allow compaction to occur

3.10. Installation of underground services within RPAs

3.10.1. If installation of underground services is required within RPAs the following details must be adhered to:

3.10.2. Stages for installing services within tree protection areas:

- 1) No plant machinery to be used to carry out excavation
- 2) Remove just enough tree protection fencing to allow access to area and facilitate trenching.
- 3) Remove tree protection fence to allow access to work area
- 4) Remove any surface vegetation or existing hard surfaces using hand tools only.
- 5) Excavate the trench using hand tools only, keeping to minimum dimensions required.
- 6) An air spade can be used as an alternative to hand digging if required
- 7) Roots below 25mm should preferably be retained, however if required can be cut cleanly using secateurs or hand saw.
- 8) Roots over 25mm diameter will be retained and kept damp by covering with hessian (re-wetted as required).
- 9) Feed in services beneath retained roots.
- 10) Back fill trench with 200-300mm depth of excavated soil, or if required imported topsoil to BS3882:2015
- 11) Re install tree protection fencing as per tree protection plan.

3.10.3. For further information see BS5837:2012 section 7. As a minimum standard operations should be undertaken in accordance with National Joint Utilities Group (NJUG) Volume 4, issue 2.

3.11. Hand excavation of new driveway within RPA

3.11.1. For the installation of the driveway within RPAs the following details must be adhered to:

3.11.2. Stages for installation of foundations within tree protection areas:

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work. Arboriculturist to be present to supervise all works.
- 2) No plant machinery to be used to carry out excavation.
- 3) Remove any surface vegetation or existing hard surfaces using hand tools only.
- 4) Excavate for the sub base using hand tools only, keeping to minimum dimensions as required.
- 5) Roots below 25mm should preferably be retained, however if required can be cut cleanly using secateurs or hand saw. Roots to be cut only on approval of project arboriculturist.
- 6) Roots over 25mm diameter will be retained where possible, and kept damp by covering with hessian (re-wetted as required).
- 7) Where roots over 25mm can be retained within the sub base, these must be sleeved within plastic pipe to form a void in the foundation around the root, leaving room for expansion.

3.12. Installation of boundary fencing within protected areas

3.12.1. Stages for installing wooden fence posts:

- 1) No plant machinery to be used in the area for whatever reason
- 2) Remove TPF to allow access to area.
- 3) Dig post holes using hand tools, avoiding damage to the protective bark covering larger roots. Roots smaller than 25mm diameter may be pruned back using either secateurs or a hand saw, leaving a clean cut.
- 4) Damage or severance of roots above 25mm diameter must be avoided. If roots of this size are discovered, the hole should be relocated. If there are a large number of such roots it may be necessary to relocate the hole by half a fence panels length and adjust the fence panels accordingly.
- 5) Line hole with non porous lining, for example durable polythene bag.
- 6) Insert post and fill post hole with concrete to ground level.
- 7) Trim polythene to ground level

Tom Grayshaw BA (Hons) Tech Cert (ArborA) Dip Arb L6 (ABC) MArborA
Director
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