

BS5837:2012

Arboricultural Impact Assessment

School Road
Hurst, Reading

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1. Introduction

- 1.1. This report provides an arboricultural impact assessment of the proposed development for B & M Ltd at School Road, Hurst, Reading in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 1.2. **The first issue of this report supported a planning application for the building of 24 residential dwellings which has received planning consent. This report has been revised to support an amended scheme for 23 residential dwellings.**
- 1.3. This Arboricultural Impact Assessment is based on the proposed layout by OSG Architecture reference 25-1791 drawing number 50. The proposed layout is shown on the Tree Protection Plan reference TGA.2507.TPP.002A.
- 1.4. The site currently comprises two paddocks. The proposed development is the building of 23 residential dwellings.
- 1.5. 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.2507.TreeSurveyRevA.
- 1.6. The assessment made within this report is of the direct and indirect 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.
- 1.7. For details of the trees to be retained and tree protection proposed, reference should be made to the Tree Protection Plan reference TGA.2507.TPP.002A.
- 1.8. Trees on the site are protected by TPO reference TPO-1784-2021. See tree survey for further details.
- 1.9. The controlling authority is Wokingham Borough Council who can be contacted at: www.wokingham.gov.uk
- 1.10. Any questions relating to the content of this report should be directed in the first instance to T Grayshaw Arboriculture Ltd.

2. Arboricultural Impact Assessment

- 2.1. The site currently comprises two paddocks. The proposed development is the building of 23 residential dwellings.
- 2.2. This arboricultural impact assessment is intended to evaluate the direct and indirect impacts on the trees on the site in relation to the proposed development. Any potentially damaging activities proposed in the vicinity of retained trees are identified, such that mitigation to significantly reduce or avoid this impact can be detailed in the Arboricultural Method Statement and Tree Protection Plan as recommended in BS5837:2012 section 5.4.2.

2.3. Evaluation of impact of proposed tree removal

- 2.3.1. The following trees are to be removed as a result of the development proposals and are indicated with a red dashed canopy outline on the Tree Protection Plan reference TGA.2507.TPP.002A.
- T7 – Common Ash – C2
 - T8 – Common Lime – B2
 - T9 – Common Ash – C2
 - T12 – Cherry Plum – U
 - T16 – Common Ash – C2
 - T39 – Common Alder – U (dead tree)
- 2.3.2. Most of the trees proposed for removal are C and U category and are not of a quality that should present any constraint to development of the site.
- 2.3.3. T8 is B category tree proposed for removal to allow for the proposed site access. Removal of the tree will be compensated for with replacement planting as part of the landscape proposals. It should be noted that there is ample tree planting proposed which will more than mitigate for the trees removed.
- 2.3.4. In relation to the conception and design of development proposals, BS5837:2012 section 5.1.1 states: The constraints imposed by trees, both above and below ground should inform the site layout design, although it is recognised that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.
- 2.3.5. It is therefore considered acceptable to remove the trees listed above, with a recommendation for mitigation by way of providing replacement trees as part of the landscape scheme for the development.

2.4. Trees to be pruned

- 2.4.1. The buildings are located on the proposed layout 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. Tree protection

- 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.
- 2.5.3. There are very minor incursions into the RPAs of trees as a result of working room required for construction. In each case the incursions are very minor, and is unlikely to have any impact. However, in accordance with BS5837:2012 section 5.3.1 a), the area lost to encroachment is compensated for elsewhere by the tree protection fence.

2.6. Demolition, site clearance & groundworks

- 3.1.1. No demolition is required, however tree protection fencing must be installed prior to plant machinery entering site to carry out site clearance and groundworks.
- 3.1.2. To ensure damage does not occur to retained trees, tree protection fencing must be installed after tree removals have been undertaken, and prior to site clearance and groundworks proceed. If plant machinery is to be used on site as part of tree clearance, tree protection fence must be installed to prevent movement of machinery within the tree protected areas.

2.7. Construction within RPAs

It is confirmed that there is no construction or new hard surfaces proposed within the RPAs of retained trees.

2.8. Shade and future pressure to prune

- 2.8.1. Due to the position of the proposed dwellings in relation to the trees on the southern boundary, and with the driveway between the trees and the units, the relationship between the buildings and retained trees is sustainable in terms of shading. It is unlikely that there will be any pressure to prune trees from future occupants.
- 2.8.2. It is accepted that there may be some likelihood for future residents to wish to prune the existing trees to improve sunlight and daylight, however likelihood does not imply certainty. However, there is no reason to assume that any proposed works would not 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

- 2.9.1. BS5837:2012 states at section 7.7.1: 'Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the routing and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.'
- 2.9.2. Details of services have not been provided at the time of writing. If there is the requirement for the installation of underground apparatus within the RPA of retained trees, this must be carried out as per the section provided in the method statement below and in accordance with BS5837:2012 recommendations.

2.10. Ground levels

Details for existing and proposed levels were not available at the time of writing. However due to the existing ground levels on site it is not anticipated that substantial levels changes will be required. As such it is unlikely that changes in levels within the RPAs of retained trees will be required.

2.11. 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.

2.12. 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.2507.TPP.002A.
- 3.1.2. The Tree Protection Plan indicates the trees required for removal, with a red dashed canopy outline (see section below).
- 3.1.3. The tree protection fence must be installed in the position shown on the approved Tree Protection Plan and not estimated (see section below).

3.2. Phasing of works in relation to tree protection

- 3.2.1. Works on site must be carried out in the following order:
 - 1) Tree removals
 - 2) Tree protection fence installed
 - 3) Site clearance
 - 4) Groundworks
 - 5) Construction
 - 6) Removal of tree protection fencing
 - 7) Soft landscaping
- 3.2.2. The above phasing must not be changed without approval from the project arboriculturist and Council.

3.3. Restrictions within tree protection areas

- 3.3.1. 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
- 3.3.2. 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.

3.4. Tree protection fencing

- 3.4.1. The position for the tree protection fence is indicated on the Tree Protection Plan drawing number TGA.2507.TPP.002A.
- 3.4.2. 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'
- 3.4.3. Once installed, the tree protection fence must remain in place whilst any demolition, groundworks and construction take place.
- 3.4.4. Once construction is finished, the tree protection fence may be removed to allow soft landscaping to take place.
- 3.4.5. 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.

3.5. Site operations

- 3.5.1. Provisions will be required for site operations such as working access, materials storage, contractor parking, welfare facilities, temporary services/drainage etc.
- 3.5.2. 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. Tree protection fence must not be moved to accommodate site operations.
- 3.5.3. 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.

3.6. Ground Protection

- 3.6.1. The following methodology will be used to provide ground protection for pedestrian movement within RPAs in the areas indicated on the Tree Protection Plan.
- 3.6.2. Where directly adjacent to proposed buildings, an additional layer of scaffolding will be installed just above ground level to form a suspended walkway (specification given on Tree Protection Plan).

3.7. Tree surgery and removal

- 3.7.1. The trees proposed for removal are indicated on the Tree Protection Plan reference TGA.2507.TPP.002A. If required, it is recommended that trees are identified for removal by the project arboriculturist using marker paint.
- 3.7.2. Any further tree surgery works required during the development must be approved by the Local Planning Authority before being carried out.
- 3.7.3. 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.
- 3.7.4. 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.
- 3.7.5. 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.
- 3.7.6. 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.

- 3.7.7. 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.
- 3.7.8. 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.

3.8. Soft landscaping within RPA

- 3.8.1. 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.

3.8.2. 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

3.8.3. 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

3.9. Installation of underground services within RPAs

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

3.9.2. 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.

3.9.3. 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.

3.10. Installation of boundary fencing within protected areas

3.10.1. 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

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