

BS5837:2012

Arboricultural Impact Assessment

**Land east of College Lane
Hurstpierpoint**

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1. Introduction

- 1.1. This report provides an arboricultural impact assessment of the proposed development for Thakeham Homes Ltd at Land east of College Lane, Hurstpierpoint in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 1.2. This impact assessment is based on the proposed application layout reference H119-THA-PD2-ZZ-D-A-1011-Site Layout, which is shown on the Tree Protection Plan reference TGA.2786.TPP.002B.
- 1.3. The site comprises two fields located to the east of College Lane. The proposed development is the building of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works.
- 1.4. A tree survey was carried out in accordance with BS5837:2012 to identify the constraints and opportunities on the site presented by the existing trees reference TGA.2786.TreeSurveyRevA.
- 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.2786.TPP.002B.
- 1.6. The local planning authority is Mid Sussex District Council. According to a search of the councils online mapping service on 10th February 2026, there are no tree preservation orders (TPOs) at the site, and the site is not within a conservation area.
- 1.7. According to a search of www.magic.gov.uk there is no Ancient Semi Natural Woodland (ASNW) on or adjacent to the site.

2. Arboricultural Impact Assessment

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.

2.1. Evaluation of impact of proposed tree removal

- 2.1.1. Part of the G28 group will require removal to allow for construction of the pumping station, and to install the proposed surface water connection. The group comprises self-seeded Goat Willow, Alder and Hazel all with stem diameter less than 150mm.
- 2.1.2. T66, T67, T68, T69 & T71, as well as part of the G29 group will require removal to allow for construction of the proposed footpath link to the east. The G29 group comprises an area of relatively recently planted mixed deciduous trees, including Goat Willow, Oak, Hazel, Birch etc. all with stems less than 100mm. T66 – T71 are C and U category trees of low overall quality.
- 2.1.3. Part of the G52 group will require trimming back to allow for construction of the proposed sub station on the southern boundary.
- 2.1.4. In each case above, for G28, G29 & G52, the group will require reducing back from the red dashed line to the new canopy line as indicated on the tree protection plan. The majority of each group will be retained, and the trees that require trimming back or removing are all C category.
- 2.1.5. 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.
- 2.1.6. All of the trees requiring removal are C and U category, and are not of a quality that should represent any constraint to development of the site. It is therefore considered acceptable to remove the trees listed above, subject to providing suitable replacement planting as part of the landscape scheme for the development.

2.2. Trees to be pruned

- 2.2.1. The buildings are located on the proposed layout such that no tree surgery will be required to allow for construction.
- 2.2.2. In the event that any further tree surgery works are required during the development, these must be specified clearly by and agreed with the project arboriculturist. Any proposed work must comply with BS3998:2010 'Tree Work'.
- 2.2.3. Once construction has been completed, if there is the requirement for any tree surgery to ensure a satisfactory relationship between the retained trees and the new development, it is suggested that a survey of required works is conducted by the project arboriculturist, with any required further works specified to, and approved by, the council before being carried out.

2.3. Protection for retained trees

- 2.3.1. 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'.
- 2.3.2. 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.

2.4. Demolition, site clearance & groundworks

- 2.4.1. No demolition is proposed. Tree protection fencing must be installed prior to plant machinery entering site to carry out site clearance and groundworks.
- 2.4.2. To ensure damage does not occur to retained trees, tree protection fencing must be installed after tree removals have been undertaken, and prior to demolition and groundworks proceeding. 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.
- 2.4.3. If plant machinery or other vehicles are required on site for the purpose of installation of the tree protection fence, these must not operate within tree protection areas.

2.5. Hard Surfacing within the RPA

- 2.5.1. The construction of the proposed footpath at the entrance makes a slight encroachment into the RPA of T3 & T57. The encroachments have been measured accurately in AutoCAD as being T3 - 6%; T57 – 2%. This is unlikely to have any adverse impact on the trees. A precautionary approach is recommended however, with excavation for the new pavement subbase carried out by hand to ensure there is no damage to roots from the trees in the event that any are found.
- 2.5.2. The proposed gravel footpath is within the RPA of T12 & T16, albeit at the extremity of the RPA.
- 2.5.3. BS5837 states at section 7.4 that where new hard surfacing within the RPA is unavoidable, the following criteria are recommended:
- The design should not require excavation into the soil, including through lowering of levels and/or scraping, other than the removal, using hand tools, of any turf layer or other surface vegetation.
 - The structure of the hard surface should be designed to avoid localized compaction by evenly distributing the loading over the track width and wheelbase of any vehicles expected to use the access.
 - New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.
- 2.5.4. A no-dig approach is therefore proposed as outlined in the method statement section below as per these recommendations. It is confirmed that levels are such that the proposed surface can be installed without adverse impact on the trees.
- 2.5.5. Prior to installation, the area within the RPA beneath the proposed new hard surface must be protected from excavation and compaction (as a result of construction and demolition activity). This will require the use of temporary tree protection fence as shown on the tree protection plan.

2.6. Construction within RPAs

It is confirmed that no buildings are proposed for construction within the RPAs of retained trees.

2.7. Shade and future pressure to prune

- 2.7.1. The relationship between the buildings and retained trees is sustainable in terms of shading. It is unlikely that there will be unreasonable pressure to prune trees from future occupants.
- 2.7.2. In the event future residents 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.

2.8. Underground utilities

- 2.8.1. 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 routeing 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.'
- 2.8.2. The proposed surface water drainage features are indicated on the tree protection plan, and are outside of the RPAs of retained trees.
- 2.8.3. Further 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.

2.9. 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.

2.10. 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.2786.TPP.002B.
- 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.2786.TPP.002B.
- 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, with the fence removed as phases within the site are completed.
- 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) Groundworks
- 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. 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. Tree surgery and removal

- 3.6.1. The trees proposed for removal are indicated on the Tree Protection Plan reference TGA.2786.TPP.002B. If required, it is recommended that trees are identified for removal by the project arboriculturist using marker paint.
- 3.6.2. Any further removals required during the development must be approved by the Local Planning Authority before being carried out.
- 3.6.3. 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.
- 3.6.4. 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.
- 3.6.5. 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.
- 3.6.6. 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 contractors 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.
- 3.6.7. 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.

- 3.6.8. 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.

3.7. Soft landscaping within RPA

- 3.7.1. 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.

3.7.2. 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 topsoil 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

3.7.3. 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

3.8. Installation of underground services within RPAs

- 3.8.1. If installation of underground services is required within RPAs the following details must be adhered to:
- 3.8.2. 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.
- 3.8.3. For further information see BS5837:2012 section 7. As a minimum standard operation should be undertaken in accordance with National Joint Utilities Group (NJUG) Volume 4, issue 2.

3.9. Hand excavation for new pavement within RPA

- 3.9.1. For the installation of the proposed footpath required within RPAs the following details must be adhered to:
- 3.9.2. Stages for installation of foundations within tree protection areas:
- 1) No plant machinery to be used to carry out excavation.
 - 2) Remove tree protection fencing as required to allow access to area.
 - 3) Remove any surface vegetation or existing hard surfaces using hand tools only.
 - 4) Excavate the required area to maximum depth of sub base using hand tools only to avoid damage to roots, keeping to minimum dimensions 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, and kept damp by covering with hessian (re-wetted as required).
- 7) If roots over 25mm are to 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.
- 8) Install a non-woven Geotextile (such as Fibretex F4M) directly over soil grade level (levelled where necessary, by non-compacted washed sand) and fix in place.
- 9) Curb edge to be formed to a maximum depth of 150mm at edge of path closest to trees.
- 10) Backfill with Type 1 sub base material subbase material, and then a further 150mm type 1, 100 CBM3 or equivalent bituminous material.¹
- 11) Install surface finish as per engineers specification.

3.10. Hard surface removal within RPA

3.10.1. Removal of the existing hard surface within the hatched area shown on the tree protection plan must be carried out so as to avoid 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

3.10.2. Stages for hard surface removal within tree protection areas:

- 1) Dismantle fencing as required to access area
- 2) Plant machinery may be used to carry out the hard surface removal, but to avoid soil compaction must not be sited within RPAs.
- 3) Plant machinery to run only on existing hard surfaces
- 4) Plant may be used to carefully peel up existing tarmac and concrete if this will result in no disturbance to the underlying soil
- 5) Ground level below existing hard surface and sub base not to be lowered further.

¹ This section describes a typical specification. The author of this report is not an engineer and this approach must be confirmed by a suitably qualified and experienced engineer prior to installation.

- 6) Clean topsoil may be used to reinstate levels where hard surface has been removed.
- 7) Any exposed roots and surrounding newly exposed areas to be covered with up to 100mm of clean topsoil.
- 8) Tree protection fencing to be erected in final position as shown on plan

3.10.3. If the area around the retained trees is to be left following the removal of the existing hard surface, before a new hard surface is laid or soft landscaping carried out, then the area must be enclosed with tree protection fence.

3.11. Installation of no-dig surface within RPA

3.11.1. To ensure that tree roots within the ground under the proposed parking bay continue to survive during and after construction, a cellular system such as CellWeb of 100mm depth is to be used as per the specification on the tree protection plan.²

3.11.2. Stages for Installation of the cellular confinement surface:

- 1) Remove any existing hard surfaces and vegetation if required using hand tools.
- 2) Retain existing ground levels - no excavation whatsoever. Do not compact ground.
- 3) Level existing ground using non-compacted washed sand.
- 4) Install a non-woven Geotextile (such as Fibretex F4M) directly over soil level and fix in place.
- 5) Lay the cellular system over the Geotextile, and secure open under tension during the infill process with steel or wooden pegs.
- 6) Fill the cellular system ensuring any machinery works only on already filled areas. Typical infill consists of no fines angular granular material 20-40mm, which will remain un-compacted.
- 7) Install porous wearing surface e.g. block paving or gravel
- 8) Edging to be installed at existing soil grade level. Treated peg and board may be acceptable, alternatively railway sleepers, gabions or other system that does not require footings to be dug.

3.11.3. If ground levels are to be raised more than 150mm this should be achieved by the use of a granular material, which does not inhibit vertical gaseous diffusion. For example: no-fines gravel, washed aggregate, structural soil (min. 20% sand content) or cobbles.

² This section describes a typical specification. The author of this report is not an engineer and this approach must be confirmed by a suitably qualified and experienced engineer prior to installation.

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

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