

BONHAMS FIELD YAPTON

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT



Ecology
Archaeology
Arboriculture
Landscape Architecture



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1.0 Executive Summary

- 1.1. ACD was initially instructed, to carry out a tree survey, and present constraints details in accordance with BS5837:2012 *Trees in relation to design, demolition and construction*. This was to identify the quality and value of existing trees on the site, allowing decisions to be made as to the retention or removal of trees during development. Subsequently, the subject layout has been produced and is in line with recommendations of the British Standard. Adequate protection can be provided to ensure all retained trees are protected throughout development.
- 1.2. **This report has been revised (rev A) following an updated survey being undertaken in December 2019 and a revised layout being issued.**
- 1.3. The site currently comprises two open grass fields measuring about 3.2 hectares. Separating the fields and along some of the site boundaries are maintained hedgerows. All trees within the survey are either growing within boundary hedgerows or are off-site trees. The proposed development comprises of multiple residential units with associated road network and infrastructure.
- 1.4. Only two trees are proposed for removal, T26 Monterey Cypress and T12 Hawthorn, both are category U due to diminished vitality.
- 1.5. The relationship between the building and retained trees is sustainable and is not likely to result in any pressure to prune requests from future occupants.
- 1.6. Trees covered by TPO TPO/Y/1/10 will not be affected by development.
- 1.7. The tree protection must be erected after tree removals and surgery but before any demolition or construction contractor enter the site, and before any soil stripping takes place.
- 1.8. There will be no changes in levels, service routeing, machine activity, storage of materials or site hut positioning within areas to be protected, and the protective fencing shall remain in position for the duration of the construction process.

2.0 Introduction

- 2.1. Seaward Properties Limited originally instructed ACD Environmental in October 2016 to prepare the following impact assessment and further instructed ACD to update the survey and this report in December 2019
- 2.2. The tree information within this report is based on the data supplied in the revised tree survey report ACD reference SEA20727trA
- 2.3. Following the recommendations of the British Standard¹, this report includes the necessary information to support a planning application. It demonstrates that the impact, both direct and indirect, of the proposed development within the site, has been assessed and where appropriate, mitigation and tree protection proposed.
- 2.4. The implementation of the protection methods recommended within this report is critical for ensuring the retained trees are successfully protected through the construction process and must be implemented prior to any work on the site.
- 2.5. This assessment is based on the supplied layout drawing, ref: 18076 P102 V and site survey, ref: 1651/01A.
- 2.6. The controlling authority is Arun District Council, who can be contacted at: Civic Centre, Planning Services, Maltravers Road, Littlehampton, BN17 5LF, Tel: 01243 863141.
- 2.7. This assessment considers the impact of the development on the constraints posed by the retained trees (both beneath ground: the root protection area (RPA), and above ground: the canopy).
- 2.8. Direct impact from development comes in six main forms: 1) Surface installation within RPAs, 2) Root loss from excavation for foundations, drainage and other utilities within RPAs, 3) Soil stripping, removal and level changes within RPAs, 4) Excessive

¹ BS5837:2012 *Trees in relation to design, demolition and construction- Recommendations*, London: British Standards Institute

access facilitation pruning to retained trees, 5) Soil compaction from storage and vehicle movements within RPAs, 6) Soil contamination.

2.9. The indirect impact can come from changes to the site hydrology, future pressure to prune or fell, failure of trees exposed by removal of neighbouring trees, and other environmental changes which can take several years to manifest.

2.10. The RPA for each tree represents a minimum area in m² that should be left undisturbed around each retained tree. This is initially represented by a circle but is often adjusted to account for constraints to root growth within the site (primarily highways and buildings). It is, therefore, important to ensure the protection of trees both above and below ground. Recommendations are provided in the British Standard as to the protection of existing trees before, during and after development. This is achieved by ensuring the tree protection plan and arboricultural method statement is implemented before any commencement on site.

3.0 Arboricultural Impact Assessment

3.1. Overview of proposed development

3.1.1. The proposed development comprises multiple units with associated road network and infrastructure. The development has a very limited impact on the existing tree stock.

3.2. Tree Preservation Orders

3.2.1. As per the local authority mapping website in December 2019, trees along the eastern boundary are protected by a tree preservation order TPO/Y/1/10. These are shown as off-site trees T15 - T24. The southwestern section of the site falls within a conservation area. However, this section is devoid of on-site trees and has no construction works proposed.

3.3. Trees proposed for removal & surgery

3.3.1. The following trees are proposed for removal:

- Category U: T26 (Monterey cypress) very poor vitality
- Category U: T13 (Hawthorn) poor quality

3.3.2. Both the trees proposed for removal are purely for best arboricultural practice and reasons of safety.

3.3.3. The existing gap through H1 will have to be widened by 5.5m to facilitate the main access road and pathways. The removal of this section equates to only a small percentage (<5%) of the overall length of the retained hedge. The visual impact of this widening will be limited due to its positioning within the site.

3.3.4. A section of H1 and H3 need light pruning back by up to 60cm to allow for working room for the construction of parking adjacent parking bays.

3.4. Site clearance and construction

3.4.1. To ensure damage does not occur to trees highlighted for retention, tree protection fencing must be erected before ANY plant/vehicles entering site whatsoever. This should be subject to a pre-commencement site meeting between the developer and the project arboriculturist.

3.4.2. No special demolition procedures need to be observed on this site, other than respecting the tree protection fencing.

3.4.3. The construction of all buildings is proposed outside the RPAs of all retained trees.

3.5. Highways & visibility splays

3.5.1. The highway entrance to the site is positioned that no remedial tree works or removals are required.

3.6. Hard surfacing within RPAs'

3.6.1. Adjacent to plot 8 is a parking area with one of the bays shown within the RPA of off site tree T30. The incursion is minor measured at 1.75m² which equates to 0.8% of the notional rooting area, this will not have a significant detrimental impact to the vitality of the tree. Therefore, no special construction methods will be required at this location. Given its 4m crown clearance the tree will not need to be crown lifted to allow for the carpark parking.

3.7. Protection fencing

3.7.1. Figure 2 of the British Standard recommends a standard fencing design for tree protection. This is a weld mesh panel design, mounted upon a well-braced scaffold framework. This is perfectly adequate for this site and all the retained trees can be suitably protected by its erection before any works start on site whatsoever.

3.8. Shade and future pressure to prune

3.8.1. ACD have worked with the design team from the start of this project and we feel that the resulting proposed layout is both sustainable and results in juxtapositions between trees and buildings which will not bring future requests for excessive pruning and/or tree removal.

3.9. Services

3.9.1. Full details of the service and utility provisions for the site remain to be finalised at the time of writing. However, there is adequate space for utility trenches to access the site whilst avoiding RPAs and exclusion zones.

4.0 Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE APPENDED TREE PROTECTION PLAN REF: SEA20727-03

4.1. Phasing of operations & site supervision

4.1.1. The tree protection and other arboricultural works must be carried out in the following order:

	Operation	Present	Notes
1	Tree removals	Tree contractor	See Tree Protection Plan for trees to be removed
2	Protection barriers erected	Fencing contractor	See Tree Protection Plan for position and type of barriers
3	Pre-start meeting	ACD, site manager, groundwork, foreman, demolition foreman	To 'sign-off' protection prior to any plant activity, demolition & groundworks on site
4	Construction works	All construction staff	
5	Removal of protection barriers and landscape work	ACD, landscape contractor, site manager	See method statement

4.1.2. Supervision is required should any unplanned access and/or work be required in the construction exclusion zone.

4.2. Construction exclusions zone

4.2.1. Barriers and/or ground protection must be used to protect all retained trees before any machinery or materials are brought onto the site, and before any demolition, development or stripping of soil commences.

4.2.2. Where all activity can be excluded from the RPA, vertical barriers must be erected to create the construction exclusion zone (CEZ). The default position of which is shown on the appended Tree Protection Plan.

4.2.3. Where, due to site constraints, construction activity cannot be fully or permanently excluded from all, or part of a tree's RPA, appropriate ground protection can be installed.

4.2.4. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.

4.2.5. Inside the exclusion zone, the following shall apply:

- No mechanical excavation whatsoever.
- No excavation by any other means without arboricultural site supervision.
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools).
- No storage of plant or materials.
- No storage or handling of any chemical including cement washings.
- No vehicular access.
- No fire lighting.

4.2.6. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees.
- No fire shall be lit such that flames come within 5m of tree foliage.

4.3. Tree protection barriers

4.3.1. The construction exclusion zone will be protected as per the appended tree protection plan that shows the default alignment of the tree protection barriers, to be installed prior to any of the following taking place:

- Archaeology
- Demolition
- Plant and material delivery
- Soil stripping
- Utility installation
- Construction works
- Landscaping

4.3.2. Stages of installation of barriers:

- 1) Hand clearance of any vegetation to allow clear working access.
- 2) Setting out of node points
- 3) Barriers erected
- 4) Site meeting with project arboriculturist to 'sign-off' tree protection fencing.
- 5) Site accessible to demolition/construction traffic

4.3.3. Once erected, all barriers will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.

4.3.4. The default barrier construction is suitable for areas of high-intensity development and shall comprise of interlocking weldmesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.

4.3.5. The images below are alternative barrier designs that have been successfully used on site and that ACD is happy to support if a variation from the default style is required. If such a variation is necessary, the approval of the project arboriculturist will be obtained prior to any implementation on site.

4.3.6. Once barriers and/or ground protection have protected the exclusion zone, construction work can commence.

4.3.7. All weather notices should be erected on the barriers (for example see figure below).



Tree protection sign (download from <http://www.acdenvironmental.co.uk>)



Weld-mesh panels on scaffold uprights



Weld-mesh panels on wooden posts



Chain-link on angle iron uprights

4.4. Site storage, parking, welfare facilities, etc.

4.4.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop off points, etc.

4.4.2. It is acceptable to place site cabins and walkways within the CEZ provided they are installed sensitively:

- Cabins must be placed on sleepers (or similar) to spread the load, avoiding point loading and associated soil compaction.
- The delivery of cabins should ensure that any unloading via 'hi-ab' crane can be carried out without impact on the crowns of retained trees.
- Walkways, if required, should be installed as per the ground protection specification.
- Any utilities for site compounds must be run above ground. For example, WC foul pipes/drainage and temporary electrical connections.

4.4.3. It is imperative that if cabins and walkways are installed, that fencing is erected to limit access to the protected areas. If amendments are made, the project arboriculturist should sign off the proposals prior to their implementation.

4.4.4. Contractor parking and storage areas should be sited outside the CEZ.

4.5. Tree surgery and removal

4.5.1. All trees to be removed are indicated on the TPP.

4.5.2. Sections of H1 and H3 will be pruned back by up to 60cm as indicated on the TPP

4.5.3. If any further surgery work is proposed, details will be submitted to, and approved by, the council, before being carried out.

4.5.4. All work will be carried out in accordance with BS3998² industry best practice and in line with any works already agreed with the council.

4.5.5. The tree surgeon shall ideally be chosen from The Arboricultural Association's Approved Contractor list. All work shall be undertaken at the appropriate time and with the consent and approval of the site agent.

4.5.6. The statutory protection^{3 4} will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

4.5.7. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

² BS3998:2010- *Recommendations for Tree Work*. London: British Standards Institute

³ *Wildlife and Countryside Act*. (1981) London: HMSO.

⁴ *Countryside and Rights of Way Act*. (2000) London: HMSO.

4.6. Soft landscaping

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

4.6.2. At no time is any heavy plant to be used within any protected area.

4.6.3. Removal of existing vegetation (including turf) will be carried out with hand tools only.

4.6.4. Should the soil be compacted or have a poor structure that may hinder the development of any new planting, soil decompaction techniques may be used upon consultation with the project arboriculturist.

4.6.5. Tree protection barriers may be removed to allow access and then replaced as required/per approved documents (in liaison with the arboricultural clerk of works)

4.6.6. Levels (high spots) will not be reduced or excavated in any way. Use good quality topsoil to level any low-lying areas and hollows, and provide a fine tilth to lay turf on. This imported soil must not result in a level increase of more than 100mm in any area.

4.6.7. Import materials by hand in wheelbarrow or using a digger sited outside the sensitive area.

4.6.8. Any excavation for planting pits must be dug using hand tools only.

4.6.9. No works will be carried out within any protected areas if the soil moisture is at a level likely to allow compaction to occur.

4.7. Installation of boundary fencing within protected areas

4.7.1. Stages for installing wooden fence posts:

No plant machinery to be used in the area for whatever reason

1. Remove TPF to allow access to area.
- 2) Dig postholes 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.
- 3) 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.
- 4) Line hole with non-porous lining, for example, durable polyethene bag.
- 5) Insert post and fill post-hole with concrete to just below ground level.
- 6) Trim polyethene to ground level and fill with clean topsoil.

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Arboriculturist

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Appendix: Tree Protection Plan

SEA20727-03



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