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Proposed Development at Former Warninglid Primary School, Slaugham Lane, Warninglid, West Sussex, RH17 5TJ

BS5837 (2012) Survey and Report

Pursuant to British Standard 5837:2012 Trees in relation to design, demolition & construction

May 2025

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1.0. Introduction

Arborweald Environmental Planning Consultancy (AEPC) has been commissioned by the Waafer Homes Ltd (landowner), to provide details pursuant to the British Standard 5837: Trees in relation to design, demolition and construction – Recommendations (BS5837:2012) with regard to the proposed development of a small residential development at (former) Warninglid Primary School, Slaugham Lane, Warninglid, West Sussex, RH17 5TJ. This report is the conclusion of a fully collaborative approach between the landowner, Gould Baxter (architects), and AEPC. The existing land to tree relationship was considered, taking into account tree crown and root morphology and structural and physiological condition.

This report acknowledges a number of documents (section 1.2).

AEPC is a multidisciplinary environmental planning consultancy qualified to provide a professional service in the fields of arboriculture, ecology and the natural landscape. Jamie Foster (report author) is a trained Arboriculturist with over 18 years of experience within the contractor and consultancy industry; both domestic and commercial. Data was collected alongside colleagues from an arboricultural and ecological background with collective experience exceeding 45 years.

Assessment is based upon professional qualifications and knowledge and published professional guidance/recommendations and legislation. The BS5837:2012 tree survey was carried out on 09/05/2025 when weather conditions were dry and bright. As such, the survey was not adversely affected, and all required data was collected to fully inform recommendations made in this report.

Trees were assessed by way of visual tree assessment (VTA) from ground level with the aid of binoculars, high powered torch, probe, acoustic hammer, Tru-Pulse laser rangefinder, compass, drag tape and diameter tape.

1.1. Legal Considerations/Risk Assessment

Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year-round basis, such as pedestrian and vehicular highways and amenity areas. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could cause damage to such structures. Utilities in the proximity of tree roots should be carefully planned to avoid damaging tree structural integrity (installation and maintenance of utilities) and to avoid structural root pressure on utilities. Maintenance of utilities within rhizospheres of trees which are the subject of statutory legislation (TPOs and Conservation Areas), may require local planning authority consent and breaches of the law may occur without such consent.

Within the scope of any tree survey, it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even trees of a sound condition can be the subject of structural failure. Trees also have the rare propensity to drop limbs that appear to be in an acceptable condition. These rare occurrences have been known to take place in spring and summer on calm days. Although rare, trees shedding limbs should be acknowledged as a risk that cannot be entirely mitigated. The law requires that properties are retained safely for residents, visitors and neighbours (Occupiers Liability Act, 1957/84, Defective Premises Act, 1972 and as Common Law Duty of Care) this includes the reasonable care of trees. Trees by highways also have to be retained safely and managed to not interfere with the safe passage of highway users (Highways Act, 1980).

The trees within influence of the surveyed site currently pose minimal risk overall, however the proposed development and following significant increase in occupancy levels (within the surveyed area) places greater impetus on the need for periodic VTA in order to take appropriate action should greater hazard/risk develop in trees retained on the site. Any noted structural or physiological limitations in surveyed trees have been recorded in Table 2, however the level of detail involved in a BS5837 Survey does not match that of a Visual Tree Assessment (VTA) or Individual Tree Inspection (ITI).

The site sits east of Slaugham Lane opposite a roadside strip of mature trees designated as Ancient Semi-Natural Woodland. The area will not be impacted by the proposals, and no future (development) pressure will be placed on said trees owing to them being off-site and under Highways, or council ownership.

A single tree (T2) within the proposed site for development is subject to an existing Tree Preservation Order (TP/23/0005). Table 2, Section 5 and Section 7 detail an approach which will result in a marked improvement to the growing conditions of this 'A' Category tree; its long-term physiological and structural condition will be enhanced if recommendations within this report are followed.

1.2. Relevant Documents

Gould Baxter; Client: Mr Joe Clark; Project: Warninglid Primary School, RH17 5TJ; Drawing: Street Scene As Proposed; Job No: GH706; Drawing No: FE.03; Date: 20:12:2024.

Gould Baxter; Client: Mr Joe Clark; Project: Warninglid Primary School, RH17 5TJ; Drawing: Site Location and Block Plan As Proposed; Job No: GH706; Drawing No: FE.01; Date: 20:12:2024.

Gould Baxter; Client: Mr Joe Clark; Project: Warninglid Primary School, RH17 5TJ; Drawing: Site Plan As Proposed; Job No: GH706; Drawing No: FE.02; Date: 20:12:2024.

2.0. Rationale

Provide sustainable solutions for arboricultural features within influence of the proposed development which takes appropriate account of the area's character, ecology, and long-term sylvan provision.

3.0. Site Character Assessment

Assessment of the character of the site and surrounding area consisted of a walkover assessment of both. The general character of the area was assessed through viewing maps and assessing views into and from the site from all possible cardinal points.

3.1. (Former) Warninglid Primary School and the surrounding area

The proposed site for development is located on the former primary school site, and comprises existing buildings (original school), and a variety of external structures and temporary buildings.

The site has good arboricultural provision with the majority of trees, groups and hedges located along boundaries. A prominent, open grown tree (T2) located adjacent to a hard-surfaced play area and close to the school building, is subject to an existing Tree Preservation Order (TP/23/0005). See 1.1.

The site is located along a quiet lane approximately 1.5km, west (as the crow flies) from the A23. Slaugham is less than 1.5km to the NW, with Warninglid a similar distance to the south.

Land use surrounding the site is comprised of predominantly agricultural (pasture, and arable), with sporadic large dwellings, small>medium pockets of woodland, and some commercial.

The area proposed for development (in relation to this BS5837 Survey and Report) is located throughout the site, and therefore all trees, groups, and hedges (excluding those below the required DBH) have been acknowledged within this report.

4.0. Tree Survey

Trees were assessed individually and as groups, in relation to the surrounding landscape setting and development proposal. Trees were assessed for general condition, amenity, age and size. Table 1 lists the trees and tree measurements, and Table 2 sets out life stage, condition, categorisation and estimated remaining contribution / estimated minimum life expectancy (EML). In accordance with BS5837:2012 trees were assessed as individuals and groups based on their amenity contribution and functional proximity. Trees within groups are, however, subject to an

individual visual tree assessment and tree root protection areas (RPAs) are based upon the largest recorded diameter measurements within the groups (unless significant differences exist, in which case a range of relevant diameter measurements are taken into account). Crown spreads are measured from group edge trees at cardinal points.

- Appendix 1 - Binomial and scientific species name identification.
- Appendix 2 - Existing Tree Constraints Plan.
- Appendix 3 - Tree Protection Plan.
- Appendix 4 – Supervisory Arboricultural Watching Brief Audit Form

Trees surveyed are those within the influence of the proposed development and associated development activities.

All recommended tree works within Table 2 when implemented should adhere to British Standard 3998: Tree Work Recommendations (2010). All trees surveyed should be subject to regular visual tree inspections with the survey interval dictated by the occupancy level of each area.

Table 1: Trees and Tree Measurements

First significant branch (cardinal direction) = FB(N, E, S, W); Crown starts= CS; At ground level = AGL; Diameter at breast height = DBH; Estimated = Est.; Root protection area= RPA; millimetres= (mm); metres = (m); Hedgerow = H; Scrub = S; Codominant = codom.; Multiple stems = multi. (=≥3 stems)

Tree no.	Species	Height (m)	DBH (mm)	First Branch (m)(direction), Canopy Start (m)	Crown spread @ cardinal points; N,E,S & W (m)	RPA (m^2)
G1	Apple, domestic x 1; Maple, Japanese x 1	6	200	1.3, S, 1.8	2, 3, 3, 2	18.1
G2	Maple, field x 1; Hazel, common x 3	10	222 (multi)	1, 1	3, 3, 4, 4.5	22.3
G3	Hawthorn, common; Maple, field; Ash, common	6	203 (multi)	0, 0	2, 4, 2, 3	18.7
G4	Birch, silver x 20	15	355	1, N, 2.5	6, 3, 5, 4	57
G5	Spruce, Norway x 1; Cedar, western red x 3	16	520	0.5, 0.5	2, 1.5, 2, 2	122.3
G6	Hazel, common; Maple, field; Sycamore, C; Willow sp.; Hawthorn, c; Birch, S;	5	223 (multi)	0, 0	N, 3, 1, 3	22.6
G7	Beech, common x 2	20	660	0, W, 4	6, 7, 7, 7	197
G8	Hazel, common x 4	3	20	0, 0	1, 1, 1.5, 1	0.1
H1	Hawthorn, common; Maple, field; Blackthorn	2	100	0, 0	1, 1, 1, 1	4.5
T1	Apple, domestic	5	180	1.2, 1.2	4, 3, 3, 2.5	14.7
T2	Oak, English	16.6	920	0.5, W, 2	8, 6, 11, 9	383
T3	Oak, English	6	250	2, 2	3, 3, 3, 3	28.3
T4	Ash, common	6	200	2.5, 2.5	3, 3, 3, 3	18.1
T5	Oak, English	10	350 (multi)	2, 2	4, 3, 4, 4	55.4
T6	Maple, field	15	404 (multi)	1.8, 1.8	2.5, 4, 4, 4	73.7
T7	Oak, English	16	610	2.2, N, 4	8, 8, 6, 8	168.3
T8	Oak, English	18	840	1.5, W, 3	7, 12, 10, 10	319.2

Table 2: Tree Condition and Amenity Contribution

Structural condition = Sc; Physiological condition = Pc; Estimated minimum life expectancy = Eml; Local Planning Authority = LPA; Category A = High amenity, B = Moderate amenity, C = Low amenity & U = Hazard to targets

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
G1	Early-mature	average	average-good	20+	**B2**	Group of 2 early mature trees located off-site (N). Location limits full inspection. Asphalt extends up to boundary and as such any removal of hard-surface/proposed development within the (theoretical) RPA should be carried out under Special Protection Measures (SPM) – Supervisory Arb Watching Brief. Where unsurfaced ground is left, this will provide an enhancement to rhizosphere of this group and improve long-term conditions/lifespan. Southern crown spread incurs over boundary by 2m; pruning back to boundary line is not advised - small diameter secondary branches can be lifted to create approx. 1.8m ground clearance; any proposed structure should be positioned to factor in this canopy. **Tree(s) can be Protected throughout Development with existing fence as protection. Special Protection Measures (SPM) where hard-surface is removed/development incurs into (t)RPA.**
G2	Mature	average	average-good	20+	**B2**	Group straddles boundary (NE) comprised of native species. Ivy limits full inspection of field maple but appears sound. Surface lateral root from maple extends along boundary line (parallel to kerb stone). Removal of hard-surface should be carried out under SPM within tRPA. Fencing is attached to maple which should be removed sensitively. Minor crown lifting of maple and hazel can be carried out to tertiary and secondary unions only (to facilitate pedestrian access and remove very minor conflict with existing built form (see 7.03). **TPD w/ existing hard-surface acting as ground protection. Where removed, SPM (watching brief) during removal. Protective fencing should be positioned to protect base, main stem and lower crown spread (see TPP). Facilitation Pruning (FP) as above (7.03).**

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
G3	Early-mature	average	average-good	20+	**B2**	Boundary group of outgrown hedge species (fallen out of management). Ash in group showing clear signs of ADB (poses minimal risk currently due to size). Good arb and eco value if brought back into management - this will constitute development enhancement if carried out alongside proposals. Remove ash, hawthorn to N of largest F maple - reduce to hedge height (clipping), retain larger maple to S end of group as standard within hedgerow. This structural set up can/should be mirrored elsewhere on site if not already in existence. Asphalt path runs through tRPA; removal of surface (if required) should be carried out under SPM. Gap (4-5m section) exists between G2 and G3 - this should be planted as per G3 to improve connectivity and boundary arb provision. **TPD w/ Standard Protection (fencing) and Enhanced with Planting (EwP) (7.2). SPM (7.01a) if hard-surface removed within RPA.**
G4	Mature	average	average-good	20+	**B2**	Southern boundary group of single species which creates significant impact (collectively). Some trees are becoming outcompeted by more dominant individuals. Thin for form (approx. 50%) retaining better quality/condition trees. This will improve long-term retention of remaining trees and will provide additional space for planting of boundary hedge (to reflect species, etc of H1). No pressure from development to remove but specification (above) will create significant arb and eco enhancement. TPD w/ SP and Enhanced with Management (EwM) and EwP; see 7.2.
G5	Mature	average	average	10+	**C2**	Group of incongruous species which are located close to roadside boundary. Some tight unions combined with ultimate size of trees informs recommendation to remove and replant with a single native/more in keeping standard (multiple to ensure successful establishment) to provide significant arb enhancement to this corner of the site. **Trees can be Removed (TR) to provide sig. arb/eco enhancement. OR Trees can be Removed to Facilitate Development (TRFD); southern access into site. Where group is removed to facilitate access, replacement planting should be carried out elsewhere on site.**

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
G6	Mature	average	average	20+	**B2**	Native understorey group which sits on bank along western boundary. Some coppice stools, some standards. Coppice not yet overstood, but will become outgrown within 3-5 years, and should therefore be managed (on selective rotation) to avoid stools falling apart. Group provides good screening and significant arb/eco value and should be retained and protected throughout the development. Any access road which incurs into RPA of retained trees should be carried out under SPM and be No Dig (SES). Single cherry laurel should be removed (invasive species). Northern most coppice (x2) should be removed to facilitate access to site. Where access is required via southern corner of site; trees can be removed to facilitate this element of the proposals. 5.02/7.2 details compensation/enhancements. **TPD w/ SP AND selective TRFD where access is sought in SW corner (see TPP). SES (7.02) as shown in yellow hatch (TPP).**
G7	Mature	average-good	average-good	40+	**A2**	Group of two (same species) with southern tree dominant. N tree has previously failed and has been heavily pruned/topped to remove risk (continues to grow and can be retained safely, subject to regular monitoring). O/H cables runs west along road. Location adj. to road informs need to carry out regular monitoring. RPA off-set from road/lay-by (some signs of rooting under path); where proposed access incurs, carry out install under SPM and utilise No-Dig (SES) design. Good arb value and therefore design amendments should be sought to avoid RPA impact where possible. **TPD w/ SP. SPM/SES for access (yellow hatch TPP/7.02).**
G8	Early-mature	average	average-good	10+	**C2**	Small group located N of existing field entrance. Has been recently coppiced and can be retained throughout development or removed to facilitate. Group can be replaced with compensation/enhancement planting (5.02/7.2). Plenty of coppice exists in G6 which is out of influence of proposals. **TPD w/ SP and Temp Ground Protection (TGP) OR TRFD.**

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
H1	Mature	average	average-good	20+	**B2**	Purely native boundary hedge which has (on the whole) been managed until the last couple of years. Hedge provides very good habitat and foraging opportunity, with good connectivity from N> S of site (joins with outgrown section - see G3). Risk of management lapsing and therefore, clipping (to approx. 1.8m) should be continued (from winter 2025) to avoid hedge becoming outgrown and falling apart/becoming sparse at lower canopy. Some scope to add structural diversity with interspersed standards amongst hedge (ref G3/field maple and T3 – see 7.2). **TPD w/ SP.**
T1	Mature	average	average	20+	**B1**	Single tree located 2.5m from existing building. Some lower canopy pruning has been carried out to sub optimal standard. Tree species (ultimate size) is such that it could be retained effectively throughout the development and continue to provide good ecol. and arb value to the site (and proposed development). Existing hard-surface extends down from wider tarmac area to within 1.1m from base of tree; removal of surface to be carried out under SPM where it incurs into RPA. **TPD w/ SP and Facilitation Pruning (FP) to remove conflict with built form/facilitate access around existing building (see 7.03).**

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
T2	Mature	average-good	average	40+	**A1**	Prominent tree within the centre of the site and visible from public viewpoints (road) – this tree is subject to an existing TPO(TP/23/0005); this has been fully acknowledged within this report. Existing/historic hard-surfacing runs up to and around the western extent of the rhizosphere (up to base of tree). East side: level drops slightly (150mm) to grassed surface with good>optimal rooting conditions. Base is sound, with indication of rooting under tarmacadam surface (visible cracks at surface). Historic seam 1.7>3 (SE); well occluded (should fully occlude) but should be monitored regularly. Visible signs of minor stress with some tip dieback (west). Good internal growth. Potential for significant rhizosphere enhancement (W) which should be carried out under SPM (7.01a). Arguably one of the best trees on site, and should therefore be afforded full protection, and enhancement (ground amelioration, long-term VTA/management plan). Flat roof structure (SW) should be removed under watching brief/following strict demolition methodology to avoid any impact to lower scaffold branch structure/canopy. Removal of hard-surface to be carried out under SPM following strict methodology. **TPD w/ SP, SPM (7.01a/b), Ground Amelioration (GA) – 7.04 and sustainably retained with ongoing VTA (5.02/7.2). Tarmacadam surface can be used during development (COA) with removal and amelioration to be carried out post-build (final phase).**
T3	Early-mature	average-good	average-good	40+	**A1**	Early mature native tree within existing boundary hedge. Vital condition with no structural flaws. Unlimited rooting to all cardinal points. Tree has excellent potential to mature into a prominent 'A' category specimen and should be protected throughout the development. Hedge should be clipped periodically (to 1.8m) to maintain separation between lower canopy and hedge. **TPD w/ SP (adhering to larger of RPA or crown spread).**
T4	Early-mature	average	poor	10+	**C1**	Tree has advanced ADB with approx. 80% crown mortality. Base not accessible but likely has secondary pathogens causing decay at base. Tree will not be impacted by proposals, however should be removed due to poor condition (no significant risk with current site usage). **TR due to poor phys. and structural condition (medium term).**

Tree no.	Life stage	Sc	Pc	Eml	BS5837 Category	Comments
T5	Early-mature	average	average-good	20+	**B1**	Tree sits in boundary hedge (east) and is in good condition. Has strong potential to mature into prominent arb feature on site (irrespective of future site usage). Adj. C. ash is located to north of T5 (4m) and has significant ADB - tree should be removed to allow T5 to fully prosper. **TPD w/ SP (adhering to larger of RPA/crown spread).**
T6	Mature	average	average-good	20+	**B1**	Tree located on western boundary bank amongst G6. Heavily suppressed by adj. oak (T7, N). Significant longitudinal cavity/wound (1.5-2.5m, S); tree effectively hollow at this point but not significant concern. No management required and tree can be effectively retained throughout the development. Regular monitoring should be carried out due to proximity to road and potential future increase in occupancy levels. **TPD w/ SP. If proposed (S) access incurs RPA; SPM required.**
T7	Mature	average-good	average-poor	20+	**B1**	Tree located along western boundary bank. Major crown dieback, leaf discolouration (chlorosis). Extensive deadwood, but minimal targets (currently) - some DW over road. Tree should be monitored regularly, with survey carried out in autumn to observe any fruiting bodies. IF tree condition worsens, there is potential to retain as monolith to preserve some ecological benefit (future inspection to inform). O/H cables along roadside which canopy overhangs. **TPD w/ SP. SPM/SES for proposed access (yellow hatch/TPP/7.02).**
T8	Mature	average-good	average-good	40+	**A1**	Tree located roadside on western boundary bank (amongst G6). Base and main stem appear sound, with good unions throughout. Some remedial pruning has been carried out, with good occlusion of wounds. Location adj. road (and future potential increase in occupancy) informs need for regular monitoring (which can inform need for any sensitive remedial management. RPA off-set from road; proposed access to be carried out under SPM and utilising No-Dig (SES) design. **TPD w/ SP. SPM/SES where proposed access incurs RPA (yellow hatch/TPP/7.02). Design amendments have minimised RPA incursion. Minor facilitation pruning to eastern canopy spread as per 7.06.**

5.0. Arboricultural Impact Assessment

Based on the above findings and taking into consideration the site character assessment and that of the local area, it is suggested that the **development proposals** would have a long-term **net positive impact on the sylvan and arboricultural character of the site should** the **recommendations** detailed in this report (namely Section 6 and 7) **be followed**.

This should include a planting/aftercare scheme as well as a regular monitoring schedule to ensure sensitive future management of retained trees/groups (7.2). This should embed fully with the assessments and recommendations found in this, and the associated PEA report (DKS1495.2). In collaboration with the associated PEA, there is ample potential to positively impact on the site as a whole as well as the wider landscape through;

- Bolster planting of existing hedgerow to improve connectivity (G2>G3);
- Planting of understorey (small) and coppice species to enhance southern extent of site (scope for orchard style planting);
- Planting of standards amongst H1 (to mirror T3/F. maple amongst G3);
- Small>medium (ultimate size) tree planting adjacent to/within gardens of proposed dwellings;
- Larger species planting (away from proposed or existing targets);
- Areas dedicated to hibernacula can also be actively introduced within western boundary bank and southern site extent.

5.01 Impacts;

Development related impacts are discussed below.

Tree and Group removal;

The following groups require removal to facilitate the current proposals;

- **G5, G8 (**both ‘C’ Category groups)
- **Selective trees (some undersize) from G6 may require removal from southern extent of group to facilitate new access.**

The following trees and groups have been recommended for removal (medium>longer term) ONLY due to existing structural and physiological defects irrespective of the proposals;

- **T4 (Common ash with ADB), Common ash w/ ADB** (adj. to T5).

Moderate incursion into RPAs;

The following tree is positioned on the peripheries of the proposed area for development and are only impacted by the proposed vehicle access (to service northern detached dwelling);

- **T2, T7, T8**
- **G6, G7**

The minor incursion into these RPAs, alongside recommendations for **S**pecial **P**rotection **M**easures (7.01a/b), **S**pecial **E**ngineering **S**olutions (7.02) where required, and ongoing inspection (to inform sensitive management) mitigate any lasting impact on these trees.

Minor/Moderate facilitation pruning;

The following trees require minor remedial pruning to improve their relationship with existing/proposed built form and to improve pedestrian access around the buildings. A methodologies are included in 7.03. The specified pruning will have no negative (long-term) impact and allow for a more sustainable interaction between arb features and built form.

- **G1, G2**
- **T1**
- **T8**

5.02 Enhancements;

The following trees require direct replacement, with each one requiring at least 2-3 individuals being planted to ensure a high establishment rate;

- G6 (where individuals are removed to facilitate proposed access)
- G5

The following enhancements should be implemented to ensure a significant and long-term arboricultural net gain.

General enhancement planting – Due to the size of the area (indicated on the TPP), there is space throughout for planting to take place. The only limitations that exist are those related to soil type/conditions and limits due to local sylvan character i.e. species should be chosen which are contemporary with the native environment.

An informed choice of species for each individual location is essential for the long term, safe, retention of tree/group. The **correct choice** of **species** can also ensure that regular cyclical management of the tree/group is not required (excluding practices such as coppicing or pollarding), and high costs of long-term retention is

not an influence on whether they should be removed in the future. See 7.2/TPP for detail on species selection and positioning.

Aftercare of planted stock; To ensure that replacement and enhancement planting provides considerable impact aesthetically, arboriculturally, and ecologically, regular aftercare should be carried to improve the survival rate of new planting, and ensure restocking takes place where new planting fails.

This should include provision for; weeding, mulching, watering, and formative pruning (to encourage good structural condition in trees) and should be carried out (at agreed intervals) for no less than five years from the planting date.

See 7.2 for more detail.

Regular Arboricultural Inspection/Visual Tree Assessment (VTA) – In addition to enhancement planting/aftercare, and, as detailed in 5.0, regular site wide VTA (to inform sustainable management of trees) will also create a long-term positive impact and should be used to inform ongoing sustainable management of existing and future tree stock.

The combination of enhancement/bolster planting, and sensitive remedial management of existing tree stock will ensure a clear arboricultural improvement of the area adjacent to (south and west) of the proposed development. An appropriate methodology for VTAs is detailed in 7.2.

Significant rhizosphere amelioration; T2 (west) – Ground amelioration loosens the soil to better facilitate gaseous diffusion and tree related nutrient and moisture uptake. Ground amelioration should be implemented in the specified areas (See TPP). Due to the historic use of this areas, the use of an air spade in combination with top dressing is recommended. This should be carried out following the construction phase of the development and once the removal of hard-surface is complete.

As referred to in Table 2, there is potential for a significant increase in good rooting environment to the west of T2. Rooting exists beneath the existing tarmacadam surface (former playground) but is not required to remain in its entirety. Lifting (under a Supervisory Arboricultural Watching Brief [SAWB]) and decompaction of the substrate can therefore be carried out. This will significantly improve the long-term physiological and structural condition of this (TPO'd) tree and therefore the likelihood of sustainable long-term retention. See 7.01a, and 7.04 for approved methodology.

Airspading uses compressed air forced through a supersonic nozzle that then loosens and separates compacted soil/substrate. A mulch layer (**well-rotted** woodchip or organic waste and Biochar) can be added after and incorporated into the soil with a second round of airspading. Heavy clay can be limiting to the effectiveness of the air spade and as such, other options may be considered.

Geoinjection methods may be utilised as an alternative dependent on the condition and level of compaction, as well as presence of heavy clay soils beneath the existing foundations/areas of hardstanding due for removal/amelioration. A suitably qualified technician (with arboricultural expertise) should be instructed to assess site specific requirements and to carry out this process.

It should be noted that the addition of mycorrhizal inoculant during the geo-injection (or airspading) process is not recommended due to the lack of supporting evidence to its effectiveness (with the potential for harm being caused to existing mycorrhizal networks).

6.0. Arboricultural Protection

In accordance with BS5837 (2012), effective tree protection would be achieved through the provision of Construction Exclusion Zones (CEZs) protected by the erection of appropriate barriers (Fig 1.) and limiting construction activities to specified Demolition/Construction Operations Areas (DCOAs). The CEZs are sacrosanct areas that should not (unless specific methodologies exist) be the subject of any disturbance, including the stacking and storage of materials. The site foreman or arboriculturist should ensure that the barriers are not breached and that the CEZ remains a sacrosanct tree protection area. Trees would be the subject of protection through the erection of appropriately signed barriers '***Construction Exclusion Zone – Keep Clear'***. Utility services should be laid outside of the CEZs where possible or if they impinge into the RPA of existing trees should be implemented under special engineering solutions (SES) and or special protection measures (SPM).

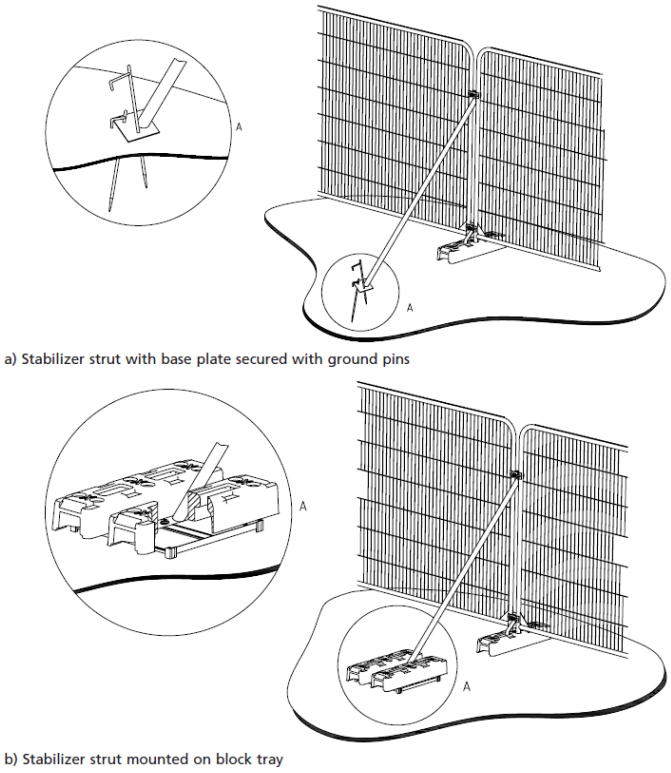


Fig 1: BS5837 Recommended Barrier Specification

6.1. Demolition/Construction Operations Area (DCOA)

The DCOA is an area or areas where all demolition and construction activities are carried out including logistics/material storage, construction worker facilities, mixing of construction materials and fuels etc. without detrimentally impacting on retained trees on and adjacent to the site. It should be the responsibility of the site foreman to plan DCOAs for each phase of development appropriately taking trees into account and to ensure that all development associated activities remain within DCOAs and building footprints.

6.1. Permanent Fencing

As shown on the associated TPP/Appendix 3, permanent fencing should be installed in order to provide long-term protection to trees along the south-western boundary.

Fencing should act as a limitation to vehicle parking and excessive footfall, however, is not required to exclude access entirely.

Post and rail fencing (in-keeping with the surroundings) should be considered as an appropriate choice.

7.0. Arboricultural Method Statement (AMS)

Where applicable, all trees can be effectively protected under BS5837 (2012) recommendations both with standard protection (6.0), Special Protection Measures (7.01), and Special Engineering Solutions (7.02) if required.

Planting and Management recommendations are detailed in section 7.2.

Through development design and layout taking appropriate account of trees, both from direct and indirect impacts affecting long-term sustainable relationship e.g. installation of new hard surfaces, tree over dominance, etc, it is possible for the proposed development to enhance the long-term local sylvan and ecological character of the site.

Removal of any trees on site to facilitate development should be limited to recommendations contained within Table 2. Site layout and design options should be exhausted prior to any decision being made to permanently remove trees not deemed suitable for such action.

Where ground levels are being adjusted within the site, it is essential that neither the lowering nor raising of levels occur within the Root Protection Areas of trees unless detailed within this report (Section 7 and TPP).

7.01 (a) Special Protection Measures

Lifting of hard-surfaces; Proposals involve some lifting of existing hard-surfaces and minor incursion into retained trees RPAs (see Table 2/TPP). This work (areas shown in pink hatch) should be carried out under a supervisory arboricultural watching brief.

The following Special Protection Measures *methodology* should be accorded with;

- *Work should be carried out by hand where possible, with the use of hand-held mechanical breakers as necessary.*
- *Where this is not possible, the use of a tracked excavator is acceptable so long as lowering of the surface is carried out from the existing hard surface (top down, pull back) so that the machine is not moving over any exposed ground (within the theoretical RPA of retained trees).*
- *Broken up concrete/hard surface should be excavated with a toothed bucket and removed by dragging/lifting small depths (5-15cm) in stages (especially where the surface begins to show signs of original substrate).*
- *Where roots are encountered in the area of hard-surface removal/incursion, the trained arboriculturist should carry out the relaying and repositioning of roots (out of influence of the development).*

- *Once repositioned, roots should be covered with site excavated topsoil (if site excavated topsoil is not available, soil brought in must conform to BS:3882, 2015).*
- *Where roots are not immediately repositioned and covered with topsoil, wrapping/covering should take place to prevent desiccation, e.g., with hessian material. Ensure wrapping is removed prior to backfilling.*
- *Where repositioning is not possible, the clean cutting back of roots (≤25mm diameter) with disinfected hand tools should be carried out instead.*
- *If roots appear in clumps, or exceed 25mm (D), assessment by the auditing arboriculturist should be made as to the most appropriate action.*
- *Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially damaging to tree roots.*

The SAWB Audit Form (to be used where proposals require a watching brief) can be found in Appendix 4.

7.01 (b) Special Protection Measures

The removal of the temporary (flat roofed) structure within the crown spread of T2 should be carried out under a supervisory arboricultural watching brief (SAWB).

The following demolition/removal methodology should be accorded with;

- *A top down/pull back approach should be followed, with no plant/machinery being positioned within the RPA of T2 EXCEPT where existing hard-surface is utilised;*
- *Where this is not possible, demolition should be carried out by hand.*
- *If the structure is to be removed as a whole/2 parts, parts should be lifted/moved away from the canopy in a south-westerly direction;*
- *No pruning/branch removal should be carried out;*
- *Any unmade ground beneath the structure should be cordoned off with fencing or covered with proprietary ground protection (7.05).*

The SAWB Audit Form (to be used where proposals require a watching brief) can be found in Appendix 4.

7.02 Special Engineering Solutions

The proposals involve the installation of access routes (vehicle and/or pedestrian) to each detached property. Where the route incurs more than 5% into retained trees RPAs, a special engineering solution (SES) surface has been specified. This should be comprised of a No-Dig (cellular confinement, or screw piled) system.

The following methodology (position indicated in yellow hatch on TPP) and minimal specification requirements for an appropriate Special Engineering Solution shall be accorded with. **In addition to the methodology, Arboricultural Supervision should be included up to and including 7.02.6 (see below) to ensure the methodology is followed;**

7.02.1; No-Dig Surface Methodology and Minimal Specification

Access road construction shall all be above ground level including, any retaining kerb construction (Fig 3.).

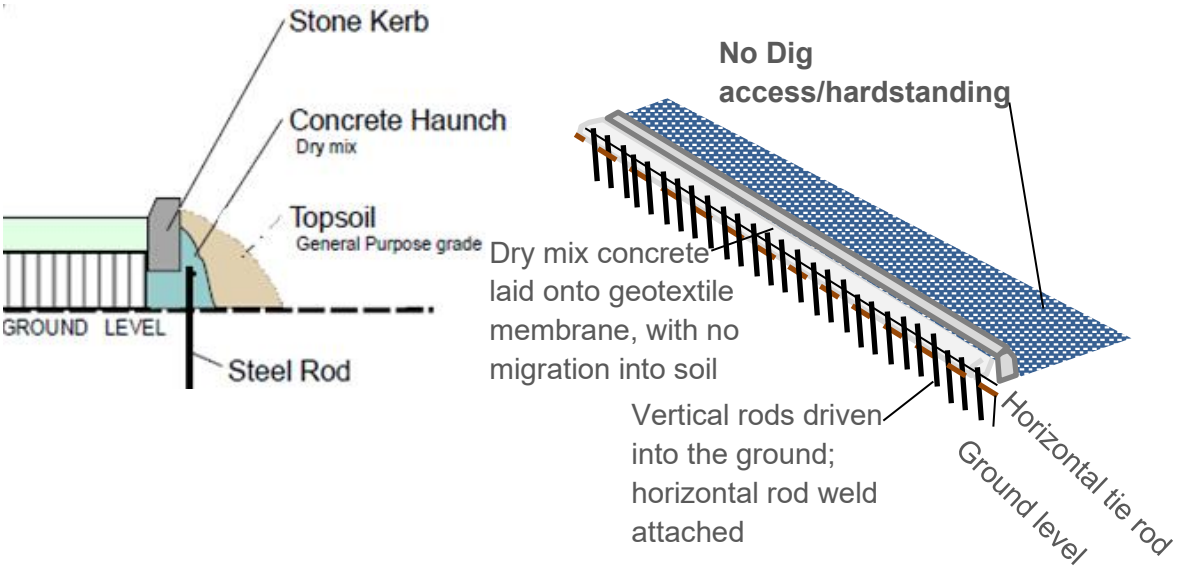


Fig 3: No-Dig Kerbing Diagram

7.02.2 Ground preparation (Stage 1)

Remove any existing surface vegetation to avoid potential build-up of anaerobic conditions (which can occur once new surface is installed). Plants to be hand weeded, and turf stripped by spade where possible. Where an excavator is utilised, the main body of the machine must be outside any CEZs, and retained trees RPAs. Where this is not practicable, suitably rated (for specific machine weight) Ground Protection Mats (GPM) should be positioned such that direct pressure from tracks/wheels is not placed on the ground within retained trees RPAs.

Where the work is carried out by machine, a toothed bucket MUST be used, and depths (not exceeding 50mm) should be lifted until surface vegetation/sward layer is removed.

Level ground where necessary by the raising of dips and hollows using sharp sand and not by further excavation (which will cause damage to roots). Where there is a risk of sharp sand being washed out, No Fines 4/40 mm angular stone can be used.

Ground high spots must not be graded off. Remove all major protrusions such as rocks and stones.

The ground layer must not be excavated OR compacted.

7.02.3 Laying of Permeable Geotextile Membrane (Stage 2)

Permeable geotextile membrane to be laid on to prepared ground. The membrane will help prevent stone migration from the 3-dimensional cellular grid and help prevent ground rutting. The membrane(s) must be kept clean and free of site materials particularly pollutants, mud and stones. Lay permeable geotextile membrane across access route/hardstanding areas. Where more than one membrane is laid, ensure adjacent membranes are overlapped by a minimum of 150mm and stapled together. Pin the membrane(s) in place.

7.02.4 Laying 3D Cellular Grid (appropriate spec for proposed site usage) & Edging Boards Installation (Stage 3)

Grid to be pinned to the ground and pinned to the edging boards, to ensure that the cells remain open to retain tension for the infill of no-fines angular 4/40mm stone. Also, pinning the grid edge cells to the edging boards will create tension as future loads spread out to the kerb; helping in the effective spreading of loads. Where the laying of utilities is required the timing of operations must ensure that the 'no dig' construction is not undermined and that new utilities are not damaged. The cellular grid(s) must be kept clean and free of site materials particularly pollutants, mud and stones (apart from specified infill).

Lay the grid across the access route/hardstanding areas on top of the geotextile membrane. Pin sufficient cells to keep them open and prevent cell collapse ensuring that any underlying utilities are not damaged; pinning cells @ 1 – 2m centres with steel j pins is recommended in areas where cells have little tension and are collapsing in. Where grid cells are located adjacent to the kerb, secure @ 1 to 2m centres. Where two cellular grids need to be joined; secure with j pins in at least every other cell along the join. Where there is an excess of cells they are to be folded and secured to the edging boards.

Edging boards must be placed on top of the ground and not dug in but secured with a sufficient number of pins.

7.02.5 Clean No Fines Cell Infill (Stage 4)

Cell infill of 4/40mm no fines angular stone. MOT/DOT Type bases **must not** be used. Cells to be filled by hand; wheelbarrowed and then raked in. The cellular grid(s) and stone infill must be kept clean and free of site materials particularly pollutants, mud, non-specified stone and other debris. Fill the cells from one direction

only ensuring that only infilled cells are walked over. Aggregate should not be tipped straight on to the cellular grid but pushed carefully from a clean surface such as robust matting onto the grid and then progressively filling and moving across the grid cells. Overfill cells by up-to 25mm depth and then lightly compact with a hand operated light whacker plate to ensure binding of stone and grid cells. The surface must not be compacted by rolling. Putatively, No Fines angular stone does not require compaction of any sort as it will self-bind when raked into place.

7.02.6 Permeable Geotextile Layer for Wearing Course (Stage 5)

This membrane is laid on top of the cellular grid to prevent migration of the wearing course and other detritus from migrating into the no fines 4/40mm angular stone sub-base. The membrane(s) must be kept clean and free of site materials particularly pollutants, mud and stones.

Lay permeable geotextile membrane across the cellular grid sub-base. Where more than one membrane is laid, ensure adjacent membranes are overlapped by a minimum of 150mm and stapled together. Pin the membrane(s) to the timber edging to secure in place.

7.02.7 Lay Wearing Course and Install Kerb (Stage 6)

Lay a semi-breathable wearing course, secured by kerbing (Fig 3). **During construction works, a temporary wearing course may be utilised to prevent damage to the final wearing course upon development completion.**

7.03 Facilitation Pruning

G1, G2, T1;

Minor facilitation pruning is required to remove conflict with existing built form and improve pedestrian access around existing buildings. The following acts as a simple methodology. Recommendations are taken from BS3998 Tree Work Recommendations (2010) and should be followed as a minimum standard.

- *Pruning is limited to small diameter branches (>50mm) to secondary and tertiary junctions only;*
- *Pruning should be carried out with Section 7.2.5/Fig. 2 of BS3998:2010 in mind;*
- *If a stem or branch is to be shortened, the cut should be made distal to a union or group of unions where one or more healthy lateral branches bear enough foliage to sustain the parent stem or branch. If there is only one such union near the intended cut, the lateral branch should have as large a diameter as possible (i.e. at least one-third and preferably more than half that of the removed portion);*

- *Stub cuts should not be left (i.e. branches should not be cut at internodal points).*

T8;

Minor facilitation pruning is required to the eastern crown spread of T8 to facilitate the positioning of the proposed dwelling.

The following shall be accorded with to avoid any long-term impact, and to allow for the proposals to take place without reactive management taking place post-development.

Recommendations are taken from BS3998 Tree Work Recommendations (2010) and should be followed as a minimum standard;

- *Pruning is limited to smaller diameter branches (>70mm) to secondary and tertiary junctions only;*
- *Pruning should be carried out to the eastern canopy spread only;*
- *No more than 2 metres should be removed from any single branch;*
- *Pruning should be carried out with Section 7.2.5/Fig. 2 of BS3998:2010 in mind;*
- *If a stem or branch is to be shortened, the cut should be made distal to a union or group of unions where one or more healthy lateral branches bear enough foliage to sustain the parent stem or branch. If there is only one such union near the intended cut, the lateral branch should have as large a diameter as possible (i.e. at least one-third and preferably more than half that of the removed portion);*
- *Stub cuts should not be left (i.e. branches should not be cut at internodal points).*

7.04 Ground amelioration

The benefits and types of ground amelioration are detailed in 5.02.

Where ground conditions are severely compacted (assessment can be carried out once hard-surfaces are removed), more specialist techniques may be required. Where airspading or/or geoinjection are required, specific methodologies should be developed with the contractor responsible.

The following constitutes a basic methodology for a simple decompaction method which is suitable for areas of light compaction such as the former school field.

The following constitutes a basic methodology for a simple decompaction method.

- *Insert a garden fork to half depth every 0.5m².*

- *Lever the fork back and forth to loosen the soil (no digging/turning soil should take place). Forking should avoid visible surface roots and the trees' structural root plate (2.5 x DBH).*
- *Well composted mulch/wood chip can be added as a shallow (≤120mm) layer in order to further enhance the available rooting medium, where this is not suitable (i.e. where the tree has grass surrounding), top soil (conforming to BS3882, 2015) may be used as a top dress instead (this is often the case when surface roots are visible and have be subject to mechanical damage by mowers, garden tractors, etc.*
- *Where possible, an area (as large as possible) surrounding the tree should be set aside for mulching, with the sward layer, if present, being carefully removed (using hand tools).*

7.05 Ground Protection

Where access is required within the RPA of retained trees during the demolition or build phase, the use of proprietary ground protection should be implemented to limit any compaction on the tree's/group's rhizosphere. Ground protection mats (TuffTrak, E-Mat, etc) of a sufficient load rating (based on the plant and machinery being used – see Fig. 3) should be installed prior to the commencement of the project and remain in-situ until project completion.

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Securing pins and joining brackets must also be installed to ensure the GPM do not move, rendering their use ineffective.

Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA, in spite of any ground protection being in place.

Alternative (lesser) specifications can be found below (BS:5837 (2012) 6.2.3.3;

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

Figure 3: Ground Protection Mat Load Rating/Typical soil bearing capacities (TuffTrak® example)

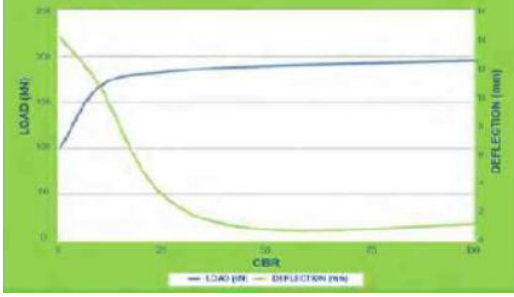
Typical Soil Bearing Capacities

Type	CBR Range
Well-graded gravels and gravel-sand mixtures	40-30
Poorly graded gravels and gravel-sand mixtures	30-60
Silty gravels, gravel-sand-silt mixtures	20-60
Clayey gravels, gravel-sand-clay mixtures	20-40
Well graced sands and gravelly sands	20-40
Poorly graded sands and gravelly sands	10-40
Silty sands, sand-silt mixtures	10-40

Type	CBR Range
Clayey sands, sand-clay mixtures	5-20
Inorganic silts, very fine rock	15 or less
Inorganic clays of low to medium plasticity	15 or less
Organic silts and organic silty clays of low plasticity	5 or less
Inorganic silts, fine sand or silts, elastic silts	10 or less
Inorganic clays or high plasticity fat clays	15 or less
Organic clays of medium to high plasticity	5 or less

Information obtained from various sources. Users are advised to obtain professional geotechnical advice on the utilisation of TuffTrak® on specific site ground conditions.

TuffTrak® Recycled UHMWPE
FEA Results



Finite Elemental Analysis

FEA was undertaken to calculate deflection for different California Bearing Ratio (CBR) values at various loading conditions applied to a 508 x 254mm foot print area at the centre of the mat.

It should be noted that these results are from a computer simulation.

Deflection depends on the various input parameters, mat material and material properties, mat thickness and width, operation ground conditions and environmental temperature.

Compression Testing

TuffTrak® has been subjected to a compressive force test at the National Physical Laboratory (NPL), UK using a circular steel platen (surface area 535 sq cm). The platen test equates to a point load test as required by BS EN 124: 1994. Samples were compressed in the NPL 12 MN hydraulic test machine. Tests were carried out under laboratory conditions with the temperature controlled to 20°C ± 1°C and relative humidity controlled to 50% ± 5%.

Please note that testing is undertaken carried out with mat samples placed on a solid substrate, therefore, data cannot be interpreted for non-solid or very soft ground conditions. During testing the TuffTrak® samples resisted breakage and splitting with progressive recovery of the materials to their original state.

Force (kN)	Deflection (mm)
100	0.57
200	0.95
300	1.52
400	2.27
600	5.05
800	8.05
1000	9.30
1200	10.10
1400	10.68
1600	11.20
1800	11.60
2000	12.07
2200	12.55
2400	12.85
2600	13.43
2800	14.55
3000	16.10
3050	16.65

7.1 Responsible stewardship of retained trees

The site is in continuous use with occupancy levels likely medium>high at certain times (this should be ascertained fully by the arboriculturist responsible for regular

VTA). As such, a regular inspection regime for 'occupancy area' trees should be carried out. Regular assessment of existing trees will help ensure a sustainable relationship between trees and the development as well as highlighting any remedial tree works that would help to safeguard the future of these trees and the safety of site users and structures.

7.2. Tree Stock and Boundary Improvements

As stated in section 5.0, the development proposal can have a net positive impact on the sylvan and arboricultural character of the area, should the recommendations (detailed in Section 7) and an appropriate planting/aftercare and management scheme be implemented.

Any planting and aftercare (schemes) should be developed and carried out in accordance with British Standard 8545 (2014) - Trees: from nursery to independence in the landscape – Recommendations.

The following considerations constitute a basic overview which should be accorded with to help ensure trees/groups attain "independence in the landscape", as per BS8545 (2014);

- *Planting position – allow sufficient space for the maturing of newly planted trees to avoid future conflict with structures and associated access requirements. This should include space for the development of root morphology.*
- *Ultimate size – appropriate species should be chosen so that they can reach maturity without the need for cyclical management to maintain canopy spread.*
- *New planting close to structures should be chosen with a smaller ultimate size and spread in mind. Species could include Sorbus sp., Prunus sp., Malus sp., Pyrus sp., Crataegus sp., Acer sp.,* ***Tilia sp. and Carpinus sp. (with appropriate cyclical crown management).*** *This list is not exhaustive.*
- *Ecological value – trees providing food source or habitat opportunities should be chosen in order to enhance the ecological value of the area.*

Aftercare should ideally be carried out for a minimum of 5 years post planting, and may include the following;

- *Staking/support systems (for rootballed/container grown trees) with periodic adjustments to ensure systems are effective and not causing damage (i.e. becoming too tight, etc)*
- *Irrigation (as necessary)*
- *Weeding/mulching*
- *Formative pruning (to ensure a structurally sound scaffold system of branches for greater chance of long-term, sustainable, retention)*
- *Annual inspection of new tree stock to inform management*

- *Beating up (replacement of failed trees)*

The following species recommendations are not exhaustive, however will provide some direction in terms of considered choices for tree replacement as referred to in Section 5.01.

- Coppice species – *Corylus avellana, Carpinus betulus, Salix sp., Ilex aquifolium (limited), Cornus sanguinea.*
- Small species (ultimate height 5-10m) – *Malus sylvestris, Sorbus aucuparia, Euonymus europaeus, Viburnum opulus, Crataegus sp.*
- Medium species (ultimate height 8-15m) – *Prunus sp, Sorbus aria, Crataegus sp., Acer campestre, Pyrus pyraster.*
- Larger species (ultimate height 15+ metres) – *Quercus robur, Carpinus betulus, Sorbus torminalis*, *Tilia sp.* (could be managed as pollard).

A minimum of;

- 10 understorey/coppice trees (a variety of species) should be planted within southern extent of site;
- 5-7 Medium sized trees (throughout the site);
- 5 larger species (throughout the site).

Indicative areas are shown on the TPP.

Visual Tree Assessment (to ensure long-term Arb net gain - Ref 5.02)

At its simplest, this should include;

- *Observations of tree/tree group condition (roots, base, main stem, crown, physiological and structural condition).*
- *Tree measurements including; DBH, height, crown spread.*
- *Acknowledgement of site/cultural (soil) constraints, occupancy levels.*
- *Recommendations for remedial measures (including ground amelioration) as required and to include timeframe in which to carry out such measures.*
- *Measures can/should include repeat inspection (inspection interval is variable and should be appropriate to each area/specific tree condition).*
- *Provision of a written report, schedule of works, and record of inspection.*

7.3. Utilities

Any utility services into the proposed development which are required to be laid, should be located outside of tree RPAs or specialist engineering solutions (SESs) should be utilised such as; impact moleing and pipe ramming. Services laid by SES should optimally pass under tree RPAs at a depth of 1m however, 700mm may also be acceptable. Method statements and specifications can be provided as a requirement of a planning condition attached to a planning consent. Where there is

no alternative to utility services being directed through RPAs and SESs are not possible an alternative arboricultural method statement specific to the situation would be required.

7.4. Implementation Timetable

In order to ensure effective protection of trees and woody plants, protection measures must be integrated into the development timetable (table 3).

Table 3: Tree and Woody Plant Protection Phased Timetable

Phase	Activity
1	Carry out tree work operations necessary to make trees safe and to facilitate development.
2	Set out construction operations areas.
3	Implementation of protection barriers.
4	Commencement of development with SPM/SES & arboricultural input where required.
5	Completion of development including landscape planting schemes where appropriate.
6	Dismantling of protection measures where not required for landscape operations.

8.0. Conclusion

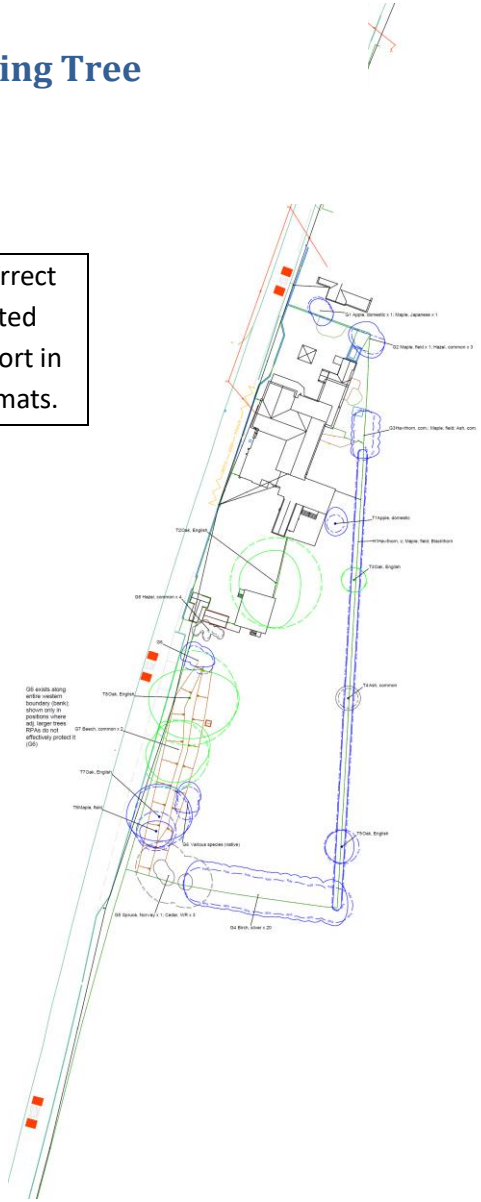
This report provides information which, if adhered to, will help ensure the effective protection of retained trees, their appropriate management/regular assessment, and help implement a planting and aftercare scheme appropriate to the local area's character. With the appropriate design, planning and implementation, the proposed development has the potential to positively contribute to the long term arboricultural and ecological value of the site and local area.

Appendix 1. Binomial Common and Scientific Names

Common and Binomial Tree Names	
Apple, domestic	*Malus domestica*
Ash, common	*Fraxinus excelsior*
Beech, common	*Fagus sylvatica*
Birch, silver	*Betula pendula*
Blackthorn	*Prunus spinosa*
Cedar, western red	*Thuja plicata*
Hawthorn, common	*Crataegus monogyna*
Hazel, common	*Corylus avellana*
Maple, field	*Acer campestre*
Maple, Japanese	*Acer palmatum*
Oak, English	*Quercus robur*
Spruce, Norway	*Picea abies*
Sycamore, common	*Acer pseudoplatanus*
Willow, species	*Salix sp.*

Appendix 2: Existing Tree Constraints Plan

To scale plans at the correct paper size are submitted separately with this report in both DWG and PDF formats.



ARBORWEALD
ENVIRONMENTAL PLANNING CONSULTANCY

Notes:
This plan has been produced by Arborweald using original plans by Offington (Drawing No: 18900223). Tree positions are subject to topographical survey accuracy. KeyTree elements have been added to plot tree positions and canopy spreads in relation to buildings and ground surfacing, as well as Root Protection Areas (RPAs).

Project:
BS:5837 (2012) survey at;
Former Warninglid Primary School, Slaugham Lane, Warninglig, West Sussex, RH17 5TJ

Drawing title:
Existing arboricultural constraints plan

Drawing number:	Version:
DKS/1495.1	ETC001

Key:
Identification of tree categories BS:5837

U Dark Red

Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

Category A Light Green

Trees of high quality with an estimated remaining life expectancy of at least 40 years

Category B Mid Blue

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years

Category C Grey

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter of <150mm measured at breast height

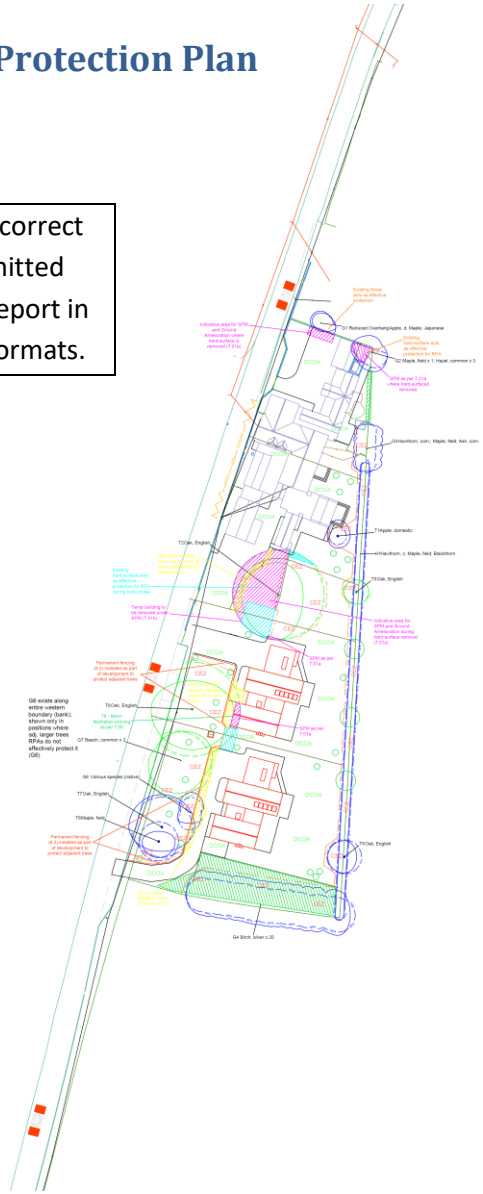
Root protection areas (RPAs)
Category A — RPA
Category B — RPA
Category C — RPA
Category U — RPA

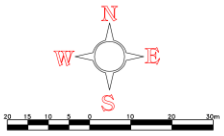
Date:
14/05/2025
Drawn by:
JF
Scale:
1:500 @ A1
Checked by:
AL

Client: Waafer Homes LTD
www.arborweald.co.uk

Appendix 3: Tree Protection Plan

To scale plans at the correct paper size are submitted separately with this report in both DWG and PDF formats.





ARBORWEALD
ENVIRONMENTAL PLANNING CONSULTANCY

Notes:
This plan has been produced by Arborweald using original plans by Offington (Drawing No: 18900223). Tree positions are subject to topographical survey accuracy. KeyTree elements have been added to plot tree positions and canopy spreads in relation to buildings and ground surfacing, as well as Root Protection Areas (RPAs).

Project:
BS:5837 (2012) survey at;
Former Warninglid Primary School, Slaugham Lane, Warninglig, West Sussex, RH17 5TJ

Drawing title:
Tree Protection Plan

Drawing number: DKS/1495.1
Version: TPP002

Key:
Root protection areas (RPAs)
Category A RPA
Category B RPA
Category C RPA
Category U RPA

Protective fencing:

Demolition and Construction Operations Area: DCOA
Construction Exclusion Zone: CEZ

Special Protection Measures:

Special Engineering Solutions:

Ground Protection:

Enhancement Planting (Indicative)

Date: 29/08/2025
Drawn by: JF
Scale: 1:500 @ A1
Checked by: AL

Client: Waafer Homes LTD
www.arborweald.co.uk

Appendix 4: Arboricultural Supervision and Audit Form

Company: Inspector:

Site:

Reference Number: Inspection Date:

Scrub, Tree, Group, Woodland Edge Number:

Development Status

Pre-development ☐ Development phase ☐ Development paused ☐

Status of Protection Measures

Where required previous remedial measures implemented ☐

All protection measures in place in full compliance with the Arboricultural Protection Method Statement (APMS) ☐

All protection measures not in full compliance with the APMS ☐

Remedial measures required due to the following within the Construction Exclusion Zone:

Ground contamination ☐ Changed soil levels ☐ Excavations ☐ Vehicle movements ☐

Cement washings ☐ Material storage ☐ Water run off ☐ Ground compaction ☐

Unauthorised tree works ☐

Remedial measures required due to the following barrier condition:

Barrier erection does not accord with the APMS ☐ Barrier not in place ☐

Barrier not intact ☐ Ground protection not in place ☐

Any other faults/breaches ☐

Details

Where remedial measures required:

Details

Where alternate tree protection measures are proposed:

General Comments

Date of next inspection:

Copied to client ☐ Copied to Site Manager ☐ Copied to Local Planning Authority ☐

References

British Standards Institute. (2012). British Standard 5837 - Trees in relation to design, demolition and construction; Recommendations.

British Standards Institute. (2010). British Standard 3998 - Tree Work – Recommendations.

British Standards Institute. (2014). British Standard 8545 - Trees: from nursery to independence in the landscape – Recommendations.

Mattheck C. and Breloer H. (1994). Body Language of Trees, Her Majesty's Stationary Office.