



L I Z A R D

Landscape Design and Ecology

HAVANT PROPERTY INVESTMENT LLP

32 NEW LANE, HAVANT

LLD2177-ARB-REP-001

Arboricultural Impact Assessment and Method Statement

Prepared by	GS
Checked by	JJ
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Planning Issue

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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake a tree survey and produce arboricultural documentation for the proposed redevelopment of 32 New Lane, Havant, Hampshire.
- 1.2 The Arboricultural Impact Assessment and Method Statement report provides evaluation of the direct and indirect effects of the proposed design and where necessary recommends mitigation.
- 1.3 The Arboricultural Impact Assessment and Method Statement report for the redevelopment of 32 New Lane, Havant has been prepared by George Sayer (*BSc(Hons) PgDip MArborA*); Project Arboriculturalist and reviewed by Joe Jackson (*Landscape Architect BA (Hons) LA DipLA CMLI*); Principal at Lizard Landscape Design and Ecology, Worthing
- 1.4 This written Arboricultural Impact Assessment and Method Statement should be read in conjunction with the associated tree survey documentation, including *LLD2177-ARB-DWG-001 – Tree Constraints Plan*; *LLD2177-ARB-SCH-001 – Existing Tree Schedule*; and *LLD2177-ARB-DWG-002 – Tree Retention and Protection Plan*.

2.0 EXISTING SITE INFORMATION

The Site

- 2.1 The site consists of a commercial / industrial site of approximately 6.68Ha. The site is dominated by the buildings (totalling c. 2.74 Ha), hard surface parking, access or gravelled areas, with small grass verges and introduced shrubs. The northern boundary is separated by a fence and sparse treeline from adjacent commercial properties. The eastern boundary rises steeply onto a heavily tree-lined bank, separating the site from the adjacent railway. To the southern boundary a fence and hedge separate the site from an adjacent commercial/industrial area. The western boundary is formed of a fence and grass verge, separating the site from New Lane and residential properties beyond.

Existing Site Vegetation

- 2.2 The bulk of the vegetation consists of small-medium ornamental trees, screening hedges and shrubs. A line of self-seeded maple and sycamore trees is present along the northern site boundary. The eastern boundary is lined with a retained bank containing mature deciduous trees, including several species of maple, horse chestnut and large hybrid poplars. The southern half of the bank also contains a tall *leylandii* hedgerow.
- 2.3 Two multistemmed holm oak trees within the site frontage are covered by *Tree Preservation Order. Havant Borough Council TPO 1034 (T1 and T2)*. TPO 0943, T1 and T2 were originally listed on the site but have been previously removed under permissions 01/52191/028 and 04/52191/036.

3.0 DEVELOPMENT PROPOSAL

- 3.1 The scheme proposals are for the redevelopment of the site for new commercial uses. The proposals would re-use the existing access points to the south and centre of the western boundary, with a new third access point proposed to the north of the western boundary. The new building would be slightly lower than the existing and would be sited within the centre of the site, with access roads and parking surrounding.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

Effects of Development Proposals on Existing Vegetation

- 4.1 The proposals have been designed to minimise removal of trees and hedges unless absolutely necessary, and to return much of the ground within RPAs at the frontage to grassland. A new access is required to the north of the site, which would require the removal of up to 18.0 m of hedge and a small but moderate-value tree. The trees and hedge provide some minor screening to the entrance but are young and could easily be replaced post-construction. C.7.0 m of the same hedge would require pruning back at the existing southern access to allow for modifications.

- 4.2 Two moderate value trees within the centre of the site would require removal. These trees are within small open spaces near the centre of the site, and as such their retention would not be feasible. Six small ornamental hornbeam trees within the existing parking area within tree pits; these trees would not be viable for retention during construction and the trees add nothing to the location's visual appeal. A small section of sparse yew hedge, a small cherry and two small silver birches at the frontage would require removal to accommodate the proposed alterations to the access.
- 4.3 The eastern treeline's nominal RPAs run under the retaining wall and hard surfaces. These surfaces are largely impermeable to water and air and were likely in place when the trees were planted, and are at the bottom of a steep bank. It is considered unlikely that significant tree roots would be present beneath the hard surfaces, and highly unlikely that roots would be present beneath the building footprint due to the inimical nature of the ground here and the difference in levels. The tree roots are likely concentrated within the bank and towards the railway line. In the absence of mitigation there is a low likelihood of roots being found and damaged or cut through redevelopment, which might cause decline of the trees and ultimate failure.
- 4.4 Where foundations and hard surfaces require removal and replacement within tree RPAs, this shall be carried out with due care under supervision by the arboriculturalist, to ensure an appropriate course of action is taken in the unlikely event that significant tree roots be found. Machinery should operate from the west pulling materials away from trees. Levels on the site have been designed to minimise raising or lowering of levels near to trees and to avoid this within RPAs.

- 4.5 Hard surfaces within RPAs are being returned to open grassland amenity space. In the absence of mitigation, careless removal of structures and hard surfaces might cause damage to roots and stems, and the alteration of levels may result in exposure and cutting of roots, or excessive burial of roots resulting in their suffocation. These risks can be mitigated by supervised excavation of materials within RPAs, ensuring that hard surfaces and structures are pulled away from trees. Underground structures should be left in situ where possible. Retaining walls surrounding the TPO holm oaks should either be left in place or carefully removed and replaced with soil banks. Minor lifting of hanging branches to the two TPO holm oaks is recommended to allow access beneath for landscape works. Levels shall be made up using local topsoil of neutral pH. Wherever possible, no excavation of RPAs or increase in soil levels will be permitted, other than in areas currently laid to hard surfaces. Where hard surfaces are removed, levels can be manually reduced providing no significant roots are found or built up using topsoil.
- 4.6 The development proposals would involve the following site operations that could impact upon the existing trees:
- ***Contractor movements; site access and operations; storage and compound;***
 - ***Removal of Existing Vegetation not for Retention;***
 - ***Demolition of Buildings, Structures and Hard Surfaces;***
 - ***Construction of New Buildings; Construction of Hard Surfaces;***
 - ***Implementation of New Highway Access;***
 - ***Ground Work / General Site Operations;***
 - ***Implementation of Soft Landscape Planting and Fencing;***
 - ***Removal of protective measures.***

Tree Retention, Protection and Removal

- 4.7 In total, 12 no. trees and c.25.0 m of hedge would require removal to accommodate the proposals. The proposals have been designed to minimise the removal of trees and hedges, and allow for the growth of the remaining trees on-site within open space. The vast majority of trees, particularly those of moderate value are proposed for retention and protection.
- 4.8 All trees; hedges; and shrubs proposed for retention shall be protected through the installation of Tree Protection Barriers. Where possible these should protect the entire RPAs of trees. In some areas, particularly where hard surfaces are proposed for removal, works within RPAs; these works should be carried out under arboricultural supervision. Fencing will be moved back to allow pedestrian access. Machinery would only be permitted where it could operate from existing hard surfaces or protected ground.
- 4.9 The demolition of hard surfaces within tree RPAs should be executed with due care and away from the trees in a “top-down, pull-back” fashion to minimise risk of harm to trees. This should be carried out under the supervision of the arboriculturalist to ensure appropriate action is taken should significant tree roots be present. Appropriate actions would include the clean severing of smaller roots, and the retention of larger roots with bridges in foundations and barriers to prevent burns from chemicals. Sections of existing foundation should be left in situ and buried where its removal is not necessary, to avoid damaging roots growing in the vicinity.

Tree Surgery Works

- 4.10 The two TPO holm oaks have lots of small branches low to the ground; landscape works beneath would be difficult and may result in snapping of small branches. It is proposed to lift the lower limbs of the two trees to 2.0 m height to allow pedestrians beneath. This would have no significant impact upon the trees' vitality and the foliage would likely regrow quickly. Confirmation should be sought from the LPA as to whether they require a separate Tree Works Application for this work.
- 4.11 The other existing trees and hedges would be managed as they currently are, with minor formative pruning to trees with defects and regular trimming of the hedges. The proposals do not alter or increase the requirement for management of the vegetation.

- 4.12 The tall poplar trees to the eastern boundary were once pollarded to c.12.0 m height, which is more than sufficient to screen the entire site from houses to the east of the railway line. The trees are now significantly grown-out from this point. Eventually, the pollarding knuckles will become a potential failure point on the trees. Management of the trees appears to have been reduced to crown-reduction of the western aspects; as part of ongoing good management of the trees, it is proposed to reinstate a pollarding regime on the trees. The frequency of this work would be dictated by the speed of regrowth, but an estimated interval of between 5 and 10 years is considered suitable, allowing trees to regain vigour but avoiding the greatest risk of failures.

Impact of Loss of Existing Trees

- 4.13 The vegetation to be removed is mostly of low value (11no. trees and a small section of hedge), with a small section of moderate value hedge requiring removal, and two moderate-value trees. The hedge removal would not significant open the site up to views, and the trees proposed for removal offer no significant visual amenity outside of the site. The new buildings would be lower than the existing and therefore existing screening is more than sufficient, and requirement to prune trees would not be altered. The impact upon visual amenity and ecology is considered to be '*negligible*' with potential for a long-term benefit from new planting and from removing hard surfaces within RPAs. No trees covered by TPO are proposed to be removed.

Tree Loss Mitigation Measures

- 4.14 The tree protection measures proposed would mitigate the impact upon tree roots of moderate-value trees within the site, including the TPO trees. Ultimately much of the RPAs to trees at the frontage, including the two TPO holm oaks would have hard surfaces returned to grassland, resulting in an improvement of the soil environment and a likely increase in their longevity. The trees lost would be replaced on at least a 1-for-1 basis, with better specimens both of species already present; new species of ecological value; and lower groundcover shrubs. The new vegetation would be planted according to a coordinated planting scheme to enhance the visual amenity and ecological value of the site. These measures are considered to mitigate more than adequately for the loss of vegetation and would result in a net gain in arboricultural; amenity; and ecological terms over the medium-long term.

5.0 ARBORICULTURAL METHOD STATEMENT

Protection and Retention of Existing Habitats – Scattered Trees

- 5.1 The Contractor shall exercise extreme care when performing operations beneath the canopy of existing mature trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches. The Contractor shall train all members of the construction workforce operating within the proximity of valued habitats and make such persons aware that there shall not be the following operations undertaken within the Protected areas:

- *Dumping of spoil or rubbish, excavation or disturbance of topsoil, parking of vehicles or plant, storing of materials or placing of temporary accommodation within an area which is the larger of the branch spread of the tree or an area with a radius of half the tree's height, measured from the trunk, and within the specified Root Protection Areas;*
- *Roots exceeding 25 mm in diameter must not be severed. If unintentionally severed; notice shall be given, and specialist arboricultural advice sought;*
- *Changes to the level of the ground within the specified Root Protection Areas, other than that specified for removal of hard surfaces;*
- *Vegetation clearance should take place outside the bird nesting season (nesting season: March-August inclusive) or alternatively under a watching brief from a suitability qualified ecologist.*

Contractor Movements. Site access and operations. Storage and Compound Areas

- 5.2 The Contractor Site Compound shall be located outside of any prescribed tree Root Protection Area and shall be permitted for the storage and securement of materials only within a temporary compound. The compound shall be fenced (*2.0m minimum height Heras Weld Mesh Fencing*) and shall allow designated contractor access without obstruction for construction vehicles entering the site.
- 5.3 The compound area shall be located so as to not incur damage or injury to the root systems or canopy of any existing trees or vegetation within or adjacent to the site, in accordance with *BS 5837:2012 – 'Trees in Relation to Design, Demolition and Construction – Recommendations'*. All site operations associated with the usage of the compound area shall be undertaken with due care and attention so as to negate damage of the surrounding environment.

- 5.4 All site operations and construction procedures for the duration of the construction period shall seek to protect the existing site vegetation and root protection areas in accordance with *BS 5837:2012*.

Removal of Existing Vegetation

- 5.5 All existing trees to be designated for removal are to be removed in accordance with the *LLD2177-ARB-DWG-002 – Tree Retention and Protection Plan*. All tree work and removal shall be carried out in accordance with *BS3998:2010* and *BS 5837:2012*. Trees designated for removal and felling shall be clearly marked on site with white paint. Prior to the removal and felling of trees, the required work and tree positions shall be agreed on site with the Landscape Architect / Arboricultural Consultant. Trees shall be felled prior to the erection of the Tree Protective Fencing. Care should be taken during the tree removal process to avoid any damage to any trees which are designated to be retained.
- 5.6 Stumps shall be removed and cut away so that the top of the stump shall be at least 450 mm below the final topsoil level in order that the site can be reinstated in accordance with the existing site levels. Stumps are to be treated with an approved herbicide to be agreed with the Landscape Architect. Where the depth is greater than 450 mm the areas shall be backfilled with topsoil to the required level.
- 5.7 The removal of shrub or scrub material within the Root Protection Area of any tree to be retained shall employ a Manual Removal method; the use of hand tools shall be used in order to maintain the ground surface of the Root Protection Area and reduce any damage to existing tree roots within the protected root zone. Adjacent trees shall not be utilised as anchors or levers to facilitate the removal of adjacent vegetation.
- 5.8 Vegetation clearance to site boundaries should take place outside the bird nesting season (*nesting season: March-September inclusive*) or alternatively under a watching brief from a suitability qualified ecologist.

Tree Surgery

- 5.9 Tree removal works are proposed and detailed within the *LLD2177-ARB-SCH-001 – Existing Tree Schedule*. Any significant defects found in the trees during the course of the scheduled work shall be reported to the Landscape Architect / Arboricultural Consultant. All scheduled and arising tree work shall be undertaken by an approved and qualified tree surgeon in accordance with *BS 3998: 2010 'Tree Work: Recommendations'*. Care should be taken to avoid damage to neighbouring trees to be retained. Branches in confined spaces shall be removed and taken down in sections. All arisings shall be transported and disposed of away from site to the Contractor's tip

Tree and Vegetation Management

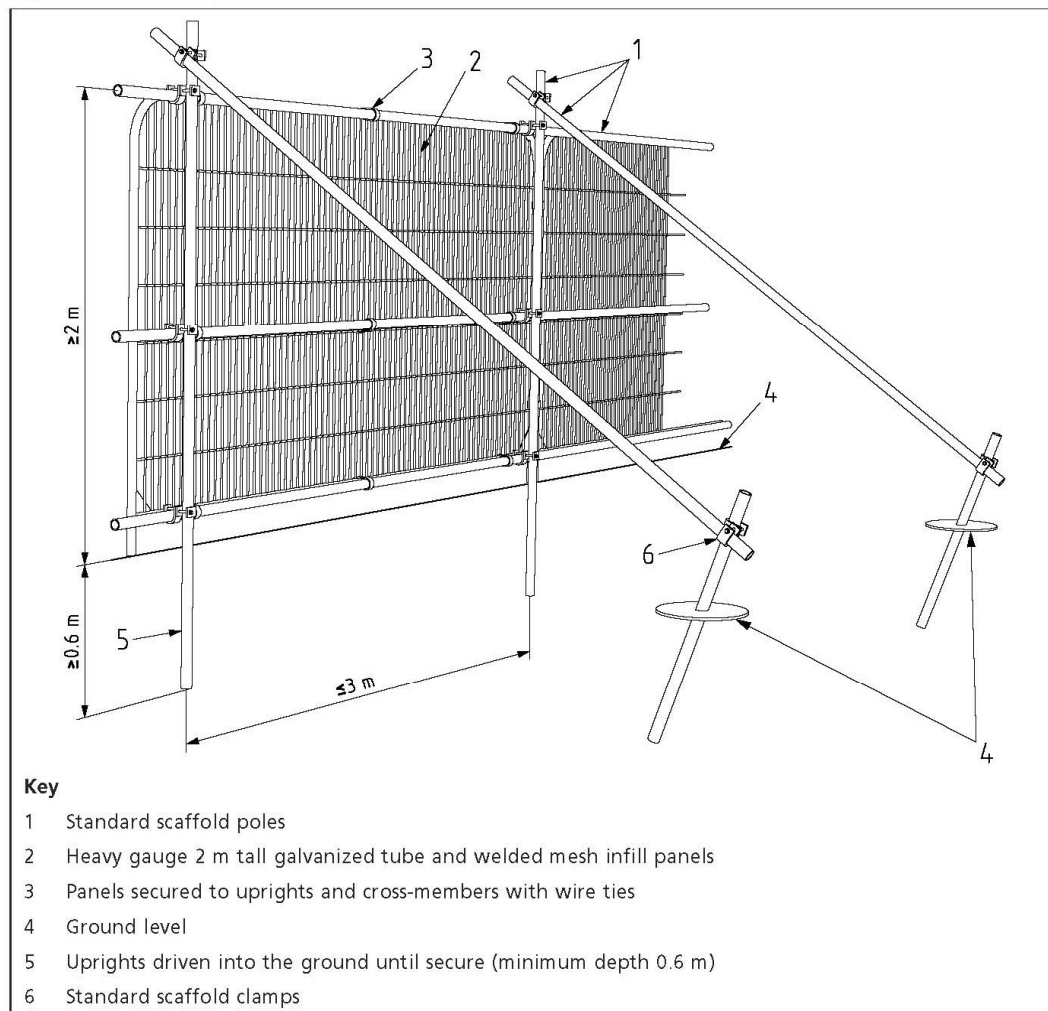
- 5.10 For Tree and Vegetation Retention and Removal Proposals refer to the accompanying *LLD2177-ARB-SCH-001 - Existing Tree Schedule* and *LLD2177-ARB-DWG-002 – Tree Retention and Protection Plan*. A full landscape management plan for the site, to include hedge trimming and pollarding of large poplars shall be produced prior to construction and followed henceforth.

Protection and Retention of Existing Vegetation

- 5.11 The Contractor shall exercise extreme care when performing operations beneath the canopy of existing mature trees and vegetation and within the specified Root Protection Areas designated for protection and avoid at all times damage to the roots, trunk and branches of existing trees proposed to be retained.
- 5.12 All excavations, cultivation and grading beneath the canopy of existing mature trees and within the specified Root Protection Areas of the existing trees and vegetation shall be carried out using hand tools (*unless otherwise specified and supervised by the arboriculturalist*), taking care not to damage or disturb any existing tree roots.
- 5.13 All trees to be retained on site shall be protected with Tree Protective Barriers, consisting of fencing erected around the area of mature vegetation in accordance with *BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'*. The fencing shall be installed, protected and maintained during the main works by the Contractor who shall be responsible for protecting any area beneath the canopy of the existing trees and within the specified Root Protection Areas.

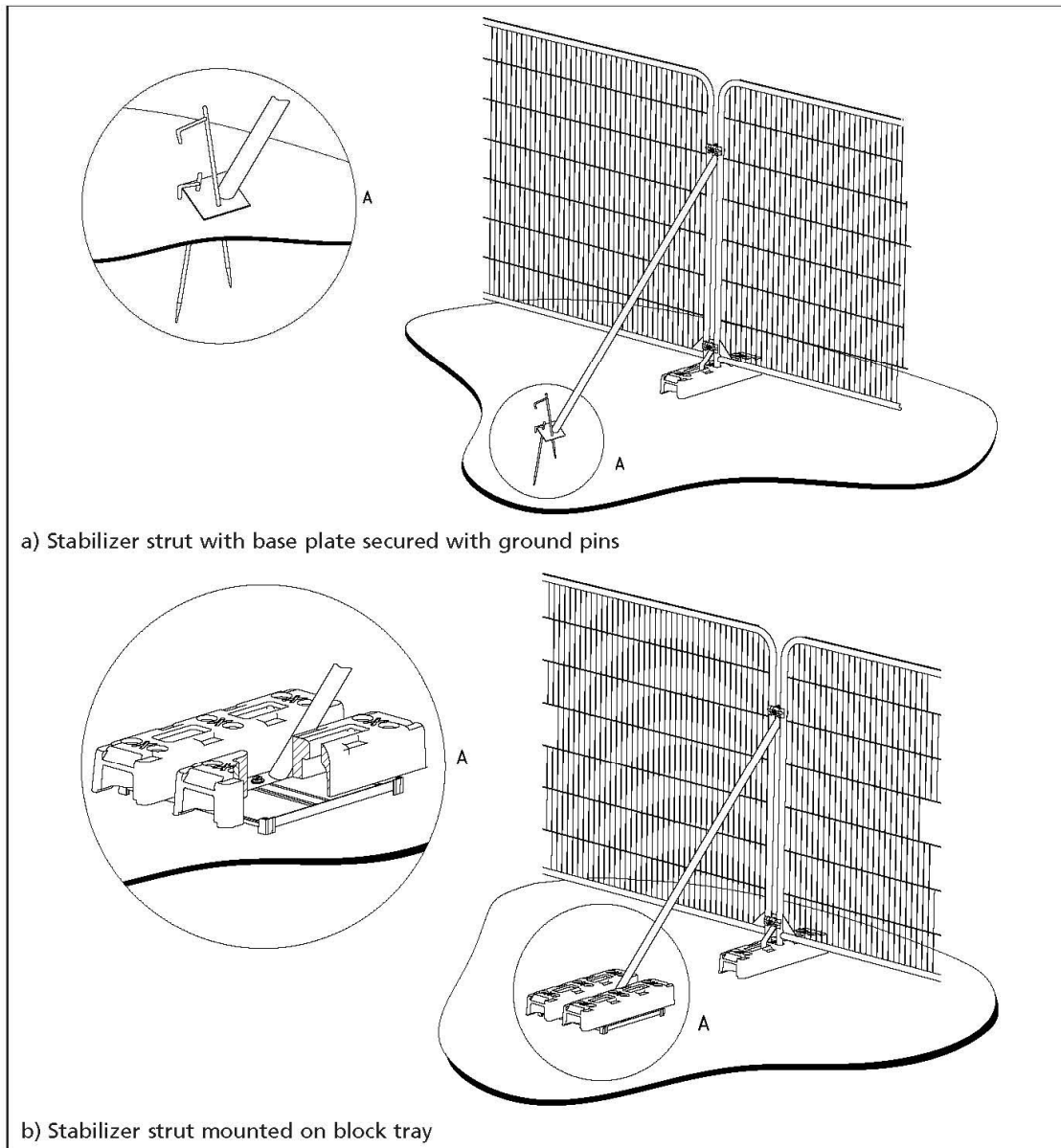
- 5.14 The installed protective barriers shall be 2.0 metres minimum height 'Heras' Welded Wire Mesh Fencing secured to a scaffolding framework, set into the existing ground, and positioned to the outside edge of the existing Tree Root Protection Area. Where existing ground conditions do not allow for the above method, the Welded Wire Mesh Fencing Panels may be mounted on concrete or rubber feet, supported on the inner side with stabilizer struts fixed on a block tray or secured with ground pins; and positioned as specified. The fencing should be strained, and fixed to fences, walls, knee rails where possible to provide a complete protected area (*refer to Figure 2 and Figure 3 below; © British Standards Institute 2012*). All tree protection to be in accordance with *BS 5837; 2012; 'Trees in Relation to Design, Demolition and Construction - Recommendations'* set out as specified within drawing *LLD2177-ARB-DWG-002 – Tree Retention and Protection Plan*.

Figure 2 Default specification for protective barrier



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Figure 3 Examples of above-ground stabilizing systems



- 5.15 Day-glo ribbons shall be maintained during the main works by the Main Contractor attached to the top of the fencing to ensure that the fencing is clearly visible during the works. The tree protection fencing shall display all-weather notices starting '*Construction Exclusion Zone – NO ACCESS*'.
- 5.16 All such barriers shall be maintained for the full contract period. All necessary excavations, earthworks and cultivation beneath the canopy spread of any existing tree; shrub or hedge shall be undertaken by hand. No commencement of construction operations should occur prior to the inspection of the installed tree and *ground protection by the Landscape Architect / Arboricultural Consultant*. Repositioning of the protective barriers during the course of the contract as the contract works progress (*for the removal of hard surfaces and soft landscape works*) shall need prior agreement with the Landscape Architect / Arboricultural Consultant.
- 5.17 Within the protected areas the following activities must not take place;
- ***No vehicles are to be used in the fenced off areas;***
 - ***No materials are to be stockpiled or stored;***
 - ***No chemicals are to be stored;***
 - ***No excavation or increase in the soil level shall occur;***
 - ***No fires shall be lit on site.***
- 5.18 Existing service runs should always be used wherever possible. Where the proposed routing of services impinges upon the root protection area of any existing tree to be retained, the routing shall be undertaken in accordance with a manual excavation method; to be carefully hand dug and routed most directly to and from the exterior of the tree root protection area radius. Services are to be trenched and routed together wherever possible to create the minimum impact upon the tree roots of the existing trees to be retained. Trench excavation across the tree root protection area radius beside an existing tree shall be avoided, whereby tree roots will become severed. Where services are to cross the edge of an existing tree root protection area, they should be routed through existing tree roots, via a hand dug ducting sleeve, avoiding damage to existing tree roots within the root protection zone.
- 5.19 Phasing of the construction works should be considered to minimise the requirement for ground protection and avoid vehicular movements over unmade ground.

5.20 Arboricultural supervision is recommended at the following stages of work;

- ***Installation / checking of tree protection measures;***
- ***Method statement briefing for site staff;***
- ***Checking of ground protection measures prior to first use;***
- ***Supervision of manual excavation;***
- ***Supervision of alteration of levels to the site frontage;***
- ***Removal of tree protection measures.***

Ground Protection Measures – Operation Zone During Construction

5.21 Should construction access be required over any areas of soft ground or areas cleared of hard surfaces, an operation zone shall be implemented with appropriate ground protection as follows:

- ***For pedestrian access only, protection should consist of 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 (100 mm depth of woodchip), laid onto a geotextile membrane;***
- ***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 (150 mm depth of woodchip), laid onto a geotextile membrane should be used;***
- ***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.***

5.22 The ground protection should be in place for the duration of the construction period in accordance with BS 5837:2012 - '*Trees in Relation to Design, Demolition and Construction - Recommendations*'. When construction work is completed the ground protection can be removed.

Tree Protection Measures – Demolition within RPAs

- 5.23 Where demolition of structures, removal of hard surfaces and excavation of new and existing foundations are required within tree RPAs, this shall be carried out with due care under the supervision of the arboriculturalist to ensure appropriate action is taken should significant tree roots be present. Smaller roots could be cleanly severed with sharp hand tools, whilst larger roots shall be retained, protected and incorporated back into the ground with bridges in foundations and barriers to prevent burns from chemicals installed as appropriate.
- 5.24 Works within these areas may be undertaken using machinery; however, all machinery must be operated at a slow pace when within RPAs and in shallow layers, such that roots can be identified before they are damaged or removed. Demolition shall be carried out away from the trees in a “top-down, pull-back” fashion to minimise risk of harm to trees. All machinery shall operate from existing or new hard surfaces, or from an area protected with appropriate measures such as an interlocking ground-protection plate system.
- 5.25 Hard surfaces within RPAs are being returned to open grassland amenity space. In this situation, underground structures shall be left in situ where possible. Retaining walls surrounding the TPO holm oaks shall either be left in place or carefully removed and replaced with soil banks. Careful removal of retaining walls can be undertaken mechanically; however, sections shall be manually removed first to ensure there are no significant roots running along the walls, and that the removal of the walls will not reduce the stability of the soil or tree. Levels shall be made up using local topsoil of neutral pH. Wherever possible, no excavation of RPAs or increase in soil levels will be permitted, other than in areas currently laid to hard surfaces. Where hard surfaces are removed, levels can be manually reduced providing no significant roots are found or built up using topsoil.

APPENDIX A – SITE PHOTOGRAPHS

Photo 1: Trees to site frontage (looking south).



Photo 2: Trees to northern part of site frontage (*looking west*). The rightmost tree is the tree within TG23 proposed for removal.



Photo 3: Low-value trees and hedge to the southern access, proposed for removal.

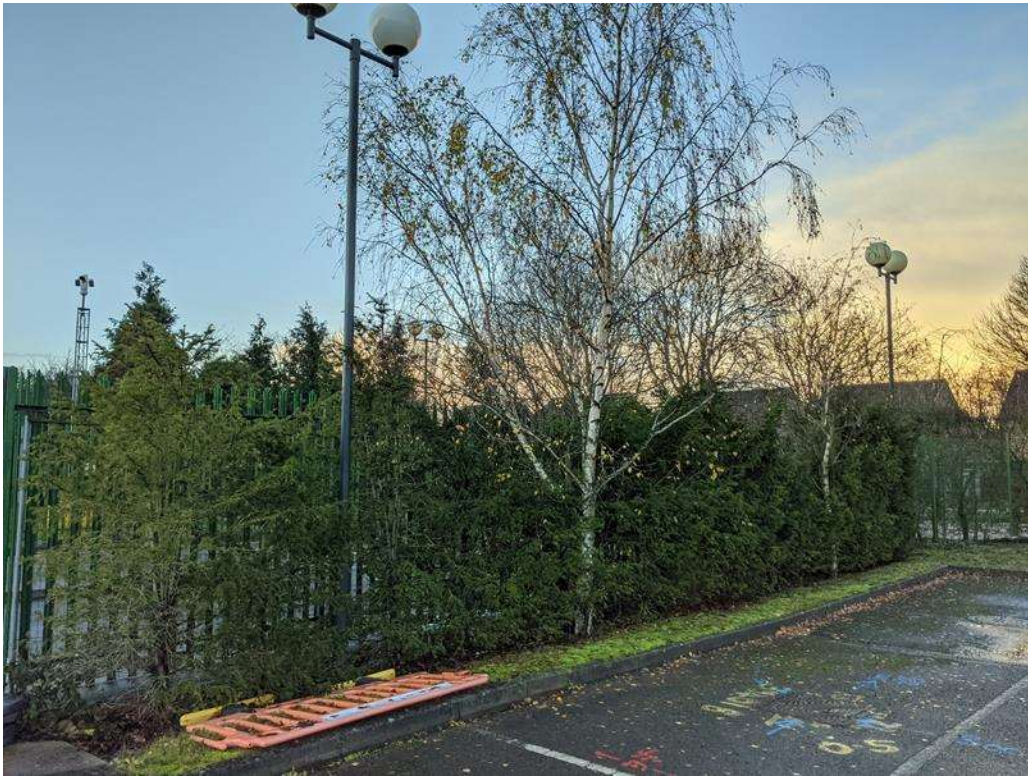


Photo 4: Trees to the northern boundary.



Photo 5: Yew hedge along the southern boundary.



Photo 6: Cypress hedge and poplar trees to the eastern boundary.





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