



LIZARD

Landscape Design and Ecology

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT

BROADWAY FARM

BROAD OAK, SOUTHAMPTON, SO30 2EU

On behalf of: Luken Beck LLP

Prepared by	GO
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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake a dendrological survey and produce arboricultural documentation for the proposed development at, Broadway farm, Broad oak, Southampton, SO30 2EU, (*Grid Reference: SU 503 133 – hereafter referred to as 'the site'.*
- 1.2 The Arboricultural Impact Assessment and Method Statement report provides assessment 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 development at Broadway farm has been prepared by Greg Oakley FdSc, MArborA; arboricultural consultant 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 *LLD2481-ARB DWG-001 – Tree Constraints Plan*, *LLD2481-ARB-SCH-001-01 – Existing Tree Schedule*, and *LLD2481-ARB-DWG-020 – Tree Retention and Protection Plan*.

Existing Site Information

- 1.5 The site is a commercial premises, the majority of which is tarmac hardstanding, with several large commercial warehouses surrounded by amenity grassland areas which are bordered by a mix of semi- mature and mature tree lines, short ephemeral vegetation, several single specie hedge lines. The site is enclosed to the north and east by an area of woodland, classified on the priority habitats inventory as deciduous woodland; and to the west the site is bordered by CCW Services Ltd; a warehouse and storage facility. To the south there is another are parcel of amenity grassland with several scattered large mature oak trees to the southern edge of this field.

Surrounding Landscape

- 1.6 The surrounding landscape is a mix of agricultural land and built-up towns and villages, with the built mass of Hedge End extending for over 2.5km to the west, while the properties of Botley extend c. 1.1km to the east. To the north and south the landscape becomes more rural in character made up of agricultural fields, hedgerows, parcels of woodland and villages. Land directly to the west is composed of woodland-

designated as *Priority Habitat Inventory- Deciduous Woodland* and recorded on the *National Forest Inventory as Broadleaved Woodland*.

Existing Site Vegetation

- 1.7 Adjacent to the northern and eastern boundaries of the site there is a c.1.6-hectare parcel of deciduous woodland classified in the *National Forest Inventory as Broadleaved Woodland*. Species composition this was dominated by pedunculate oak (*Quercus robur*) and ash (*Fraxinus excelsior*) with frequent hawthorn (*Crataegus monogyna*). Occasionally, there was silver birch (*Betula pendula*), field maple (*Acer campestre*), common cherry (*Prunus avium*) and blackthorn (*Prunus spinosa*).
- 1.8 To the south of the site there are several scattered mature and semi mature oaks *Q. robur*, one of which has a girth of 3.1m and is likely to be at least 150 years old. There are also two early mature hazel coppice stools and 1 very large mature Monterey pine, *Pinus radiata*, located at the site entrance.
- 1.9 To the west of the site there is a large amenity grassland area which is bordered by a mix of semi- mature and mature tree lines, made up of *Q. robur*, *F. excelsior* mixed species tree groups of multi stem coppiced hazel *C. avellana*, hawthorn *C. monogyna*, dogwood *Cornus sanguinea*, blackthorn *P. spinosa* and bramble *R. fruticosus*.

Development Proposal

- 1.10 The development proposals include the extension of the existing commercial area at Broadway Farm to the north-east of the existing commercial area. The extension would involve the loss of c. 900 sq. metres (m²) of improved grassland and a section of existing single species non-native hedgerow vegetation will be removed, totaling 76m, to allow for an extension of hard standing parking areas for NHS vehicles, as well as the construction of a new 560 sq. metre (m²) warehouse unit for the storage of NHS materials. No trees are scheduled to be lost with the current planned development proposal.

2.0 ARBORICULTURAL IMPACT ASSESSMENT

Impacts of Development Proposals on Existing Vegetation

- 2.1 The proposed development can have an adverse impact on the existing trees by removing them to facilitate the development, or in the future, by adversely affecting their

potential for retention through disturbance in Root Protection Areas (RPAs) or through post-development pressures to prune or remove.

2.2 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;
- Plant, vehicle, and material cleaning;
- Installation of construction elements; groundwork / general site operations;
- Installation of services and underground apparatus;
- Future maintenance;
- Removal of existing vegetation not for retention;
- Removal of protective measures.

2.3 The impacts of the development proposals are relatively minor due to the lack of trees and vegetation within the development areas. All trees within and to the out skirts of the site are to be retained and no root protection areas of any trees are likely to be impacted.

2.4 A section of low value single species ornamental hedgerow vegetation is scheduled to be removed. This sections total length is 76m and is described as; H01- *Prunus laurocerasus*, 2.2M in height and 2m at its widest point, a long hedgerow which runs down the centre of the site with the field on the east. Most of the hedgerow is growing well, the southern part has dead sections with poor form and is quite gappy in places. This is a low value hedgerow and is not considered to be a notable landscape feature.

2.5 The surrounding areas of hardstanding tarmac and amenity grassland provide adequate working space for the building of the new structure and there is ample provision for the storage of materials and surplus excavated topsoil.

2.6 The main entrance and access roadway is regularly used by large lorries and there are no trees with low branches which could be impacted by construction vehicles.

Tree Retention and Protection

- 2.7 All high, moderate and low value trees are to be retained; the majority of these are mature oaks and ash in normal to fair condition with no works being required. A section of low value single species ornamental hedgerow vegetation, H01- *P*,
- 2.8 *laurocerasus*, is scheduled to be removed. This sections total length is 76m and is described as; a long hedgerow which runs down the centre of the site with the field on the east. Most of the hedgerow is growing well, the southern part has dead sections with poor form and is quite gappy in places.
- 2.9 All trees around the development area can be protected completely using barriers. All tree protection and tree protection barriers to be in accordance with BS 5837:2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'.

Disturbance to Root Protection Areas

- 2.10 There will be no encroachment into RPAs of any trees by means of formation of access or site compound, change of levels, construction of structures, etc.

Construction in Proximity to Existing Trees

- 2.11 There is no proposed construction in proximity to any trees or the RPAs of any trees.
- 2.12 At the main entrance there is a large and prestigious pine, T19- *P. radiata*, there are no low hanging branches from this tree and it's trunk and buttress roots are a sufficient distance from the roadway to there be very little risk of harm. Tree protection fencing will installed area this trees RPA as a precautionary measure.

Tree Pruning, Canopy Reduction, or Lifting

- 2.13 The main entrance and access roadway is regularly used by large lorries and there are no other trees with low branches which could be impacted by construction vehicles. As such no canopy lifting or reduction and pruning will be required.

Risk Management of Dead Wood

Dead branches

2.14 All deadwood features should be managed in accordance with BS 3998-2010: Tree work Recommendations.

- Safety needs should be balanced against wildlife habitat protection.
- Dead branches should be shortened or if necessary, removed if they pose an unacceptable risk to people or property and if other options (e.g. diverting a footpath) are not practicable.

2.15 When deciding whether dead branches or dead trees should be retained and, if so, to what extent they might need to be pruned, a balance should be made between mitigation of risk and the maintenance of wildlife habitats. The unnecessary loss of deadwood habitats should be avoided when specifying pruning or other works, particularly if legally protected species are using the tree. The following risk factors should be taken into account:

- the location (e.g., whether the deadwood overhangs a target that cannot be readily moved, such as a highway);
- the wood properties and decay characteristics of the species concerned.
- the size of the deadwood.

Standing Dead Trees

2.16 Where standing dead trees are retained, their height should be reduced if this is required for mitigation of present or future risks. They should be inspected periodically, and further work should be undertaken (either felling or progressive reduction, depending on practicability) if necessary to keep risks within acceptable limits.

Removal of Trees and Vegetation

2.17 Describe the extent of any removal required. List trees and hedges, together with their quality/ categories, which have been considered necessary for removal, and assess what impact this would have. Describe the expected effects on existing habitats and ecological connectivity, landscape and visual aspects, amenity, and cultural value.

Tree Loss Mitigation Measures

- 2.18 To mitigate the loss of the 76m section of low value single species ornamental hedgerow vegetation, H01- *P. laurocerasus* and the loss of the moderate sized area of amenity grass, a total of 122m of hedging will be planted.
- 2.19 It is recommended that this planting shall use stock of a similar size as to what has been lost to suitably replace the lost vegetation, this will need to be minimum of 2.5 m in height. It is recommended that this new hedge planting shall be native species to the UK and should incorporate greater diversity, including at least five species and further species offering ecological value. Species should include at least four from the following:
- Guelder Rose (*Viburnum opulus*)
 - Bird Cherry (*Prunus padus*)
 - Hawthorn (*Crataegus monogyna*)
 - Blackthorn (*Prunus spinosa*)
 - Wild privet (*Ligustrum vulgare*)
- 2.20 The details of the proposed planting will be shown in the soft landscaping plan provided by the landscape architects for the project.

Ongoing Management of Tree, Hedges and Native shrubs

- 2.21 To ensure the hedges continue to be a useful ecological feature, they shall not be cut overly frequently and shall be allowed to become relatively dense and tall. The hedges shall be cut outside of the bird nesting season (which generally runs March-August inclusive) and not more than once every three years. Minor trimming of stray branches over paths etc. can be carried out more regularly if required.
- 2.22 Any failed sections of new planting or failed newly planted hedging plants should be replaced and species and sizes will have to be matched with what has been lost.
- 2.23 Responsibility for management of the site shall fall to an appropriate management company appointed by the landowner or the company's management team and as required their approved contractors.

Watering

- 2.24 In order to establish the new hedging plants, the stock should be watered fortnightly throughout the summer season in the first year of initial establishment during May / June / July / August / September. Quantity of water to be 10 litres (*1 watering can*) per metre square during each visit, for the first initial year of establishment only.

Pruning

- 2.25 New hedging plants should need minimal pruning in the first 5 years of establishment; any which appear to be forming poorly or with obvious defects should be pruned in winter as required.

Mulching

- 2.26 Following planting, hedging plants shall be surrounded by a 90mm depth of mulch, to prevent weed growth and provide slow-release nutrients to the roots. The mulch shall be checked at the end of the first and second seasons and topped up as required.

3.0 ARBORICULTURAL METHOD STATEMENT

Protection and Retention of Existing Trees and Habitats

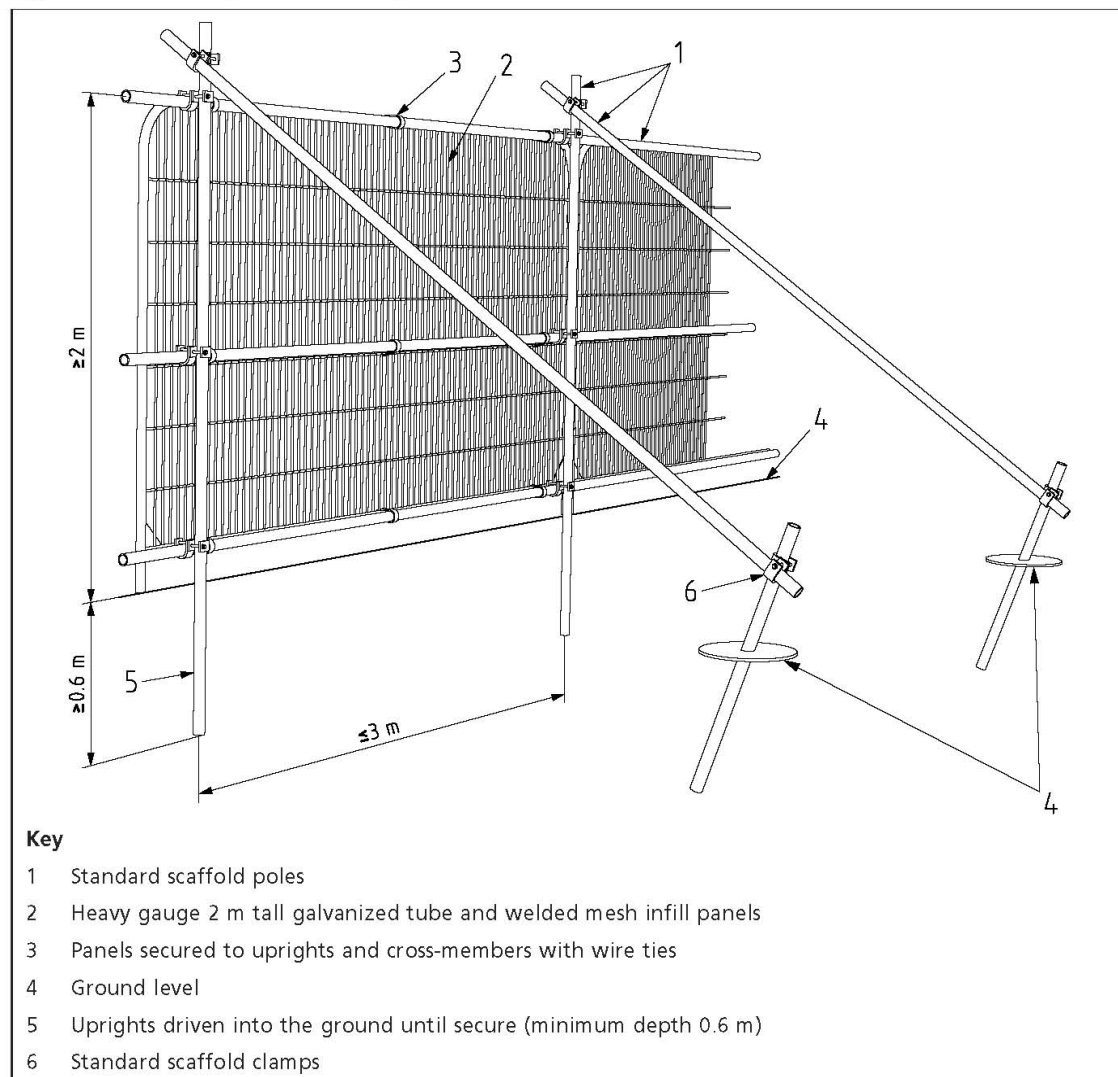
- 3.1 All trees and hedges to be retained will be protected during construction in accordance with BS5837:2012. (BSI, 2012) using tree protection fencing. No access to machinery or storage of materials will be permitted within the RPA's of retained trees or hedgerows on site. All fuel and other hazardous materials will be stored away from the RPA's of retained trees with suitable spill kits available. A detailed tree package accompanies the planning application.
- 3.2 The Contractor shall exercise due 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.
- 3.3 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, without having sought prior notification, 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;
 - Severance of roots exceeding 25 mm in diameter. 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;
 - Vegetation clearance to site boundaries during the bird nesting season (nesting season: March-September inclusive). Any clearance must be undertaken outside nesting season or alternatively under a watching brief from a suitability qualified ecologist.

Tree Protection Barriers

- 3.4 The Contractor shall exercise due 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.

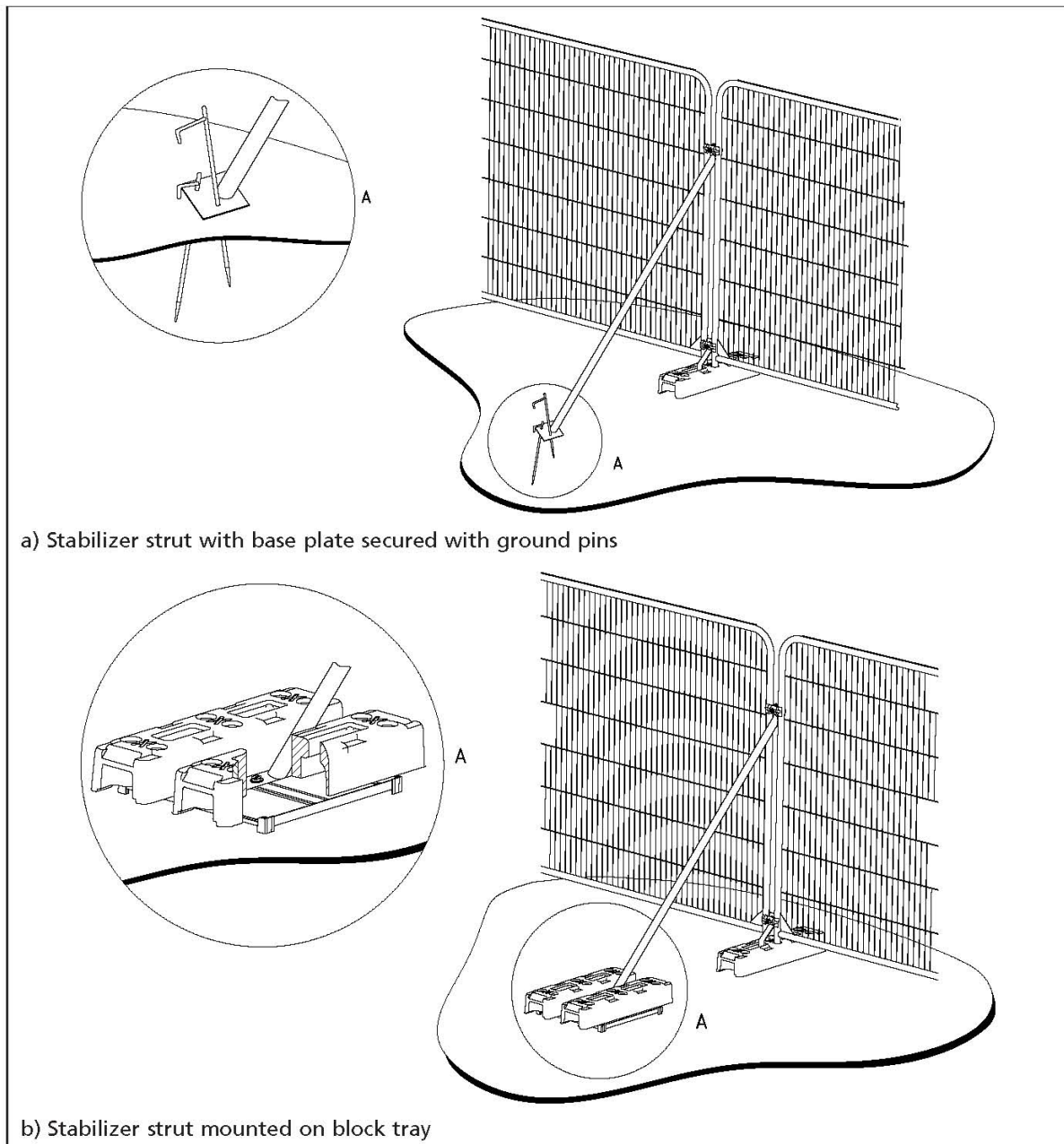
- 3.5 All trees to be retained on site shall be protected with barriers erected around the area of mature vegetation in accordance with *BS 5837; 2012; 'Trees in Relation to Design, Demolition and Construction - Recommendations'*. The barrier shall be installed, protected and maintained during the main 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.
- 3.6 The installed protective barrier 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 barrier 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 drawings *LLD2481-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



- 3.7 Day-Glo ribbons shall be maintained during the main works by the Main Contractor attached to the top of the barrier to ensure that the fencing is clearly visible during the works. The tree protection barrier shall display all-weather notices starting '*Construction Exclusion Zone – NO ACCESS*'.
- 3.8 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 / Arboricultural Consultant.* Repositioning of the protective barrier during the course of the contract as the contract works progress shall need prior consultation with the Landscape / Arboricultural Consultant.
- 3.9 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.

Services in Proximity to Existing Trees

- 3.10 The location and direction of new services should be designed to allow for services to be routed away from the RPAs of existing trees. Existing service runs should always be used wherever possible.
- 3.11 Where the proposed routing of services impinges upon the tree RPA of any existing tree to be retained; the routing should be undertaken as a minimum standard in accordance with *NJUG Volume 4, issue 2: 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees'*.
- 3.12 A 'Manual Excavation Method' to be followed to carefully hand dug and route the apparatus most directly to and from the exterior of the RPA radius.
- 3.13 Services are to be routed together wherever possible to create the minimum impact upon the roots of the existing trees to be retained. Trench excavation across the tree Root Protection Area radius beside an existing tree should be avoided, whereby tree

roots would become severed. Where services are to cross the edge of an existing RPA, they should be routed via a hand dug ducting sleeve, avoiding damage to roots.

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

- 3.14 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.
- 3.15 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.
- 3.16 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*.

Tree Surgery

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. Arisings; Disposal; Utilisation; and Retention

Arising; Disposal; Utilisation; and Retention

- 3.17 The disposal, utilization and retention of arisings must be in line with *BS 3998: 2010 ‘Tree Work: Recommendations’*. Retaining arisings on or near the site can have conservation benefits and allows the gradual recycling of the mineral nutrients and carbon that they contain. Effective financial gains can be achieved with efficient arisings management planning.

3.18 Before any work on a tree commences, it should be agreed what is to happen to the arisings (such as retained or removed from site). Any arisings remaining on the site should be stored safely in locations agreed with the client. The following should be taken into account when deciding what is eventually to be done with the arisings:

- Site usage: access, space, and safety;
- Scope for utilisation (such as use of woodchip for mulch, weed suppressant, etc.)
- Wildlife and habitat, particularly where veteran trees are present and invertebrate colonisation is likely.
- The disposal, utilization and retention of arisings must be in line with BS 3998: 2010 'Tree Work: Recommendations'. Retaining arisings on or near the site can have conservation benefits and allows the gradual recycling of the mineral nutrients and carbon that they contain.
- Before any work on a tree commences, it should be agreed what is to happen to the arisings (such as retained or removed from site). Any arisings remaining on the site should be stored safely in locations agreed with the client.

3.19 The following should be taken into account when deciding what is eventually to be done with the arisings:

- Site usage: access, space, and safety;
- Scope for utilisation (such as use of woodchip for weed suppressant or mulch);
- Wildlife and habitat, particularly where veteran trees are present and invertebrate colonisation is likely.
- Amenity;
- Pest and disease management/encouragement of beneficial organisms;
- Potential for damage to the site and adjacent property.

3.20 Arisings should not be disposed of by burning on site unless:

- other options are impracticable; or the material is affected or likely to become affected by a disease or pest for which sanitation is a necessary form of control.

- NOTE: Attention is drawn to regulations made under: The Clean Air Act 1993 and The Plant Health Act 1967, The Weeds Act 1959, and the Wildlife and Countryside Act 1981, in respect of prevention of the spread of plant and soil pests.

Removal of Existing Vegetation

- 3.21 All existing trees to be designated for removal are to be removed in accordance with the *LLD2481-ARB-DWG-001 – Tree Retention and Protection Plan*. All tree work and removal shall be carried out in accordance with *BS 5837:2012 and BS 3998:2010*. 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.

Arisings from Existing Vegetation Removal

- 3.22 Before any vegetation removal commences, it should be agreed what is to happen to the arisings (such as retention; utilisation; disposal; or removed from site).
- 3.23 Retaining arisings on or near the site can have conservation benefits and allows the gradual recycling of the mineral nutrients and carbon that they contain. Effective financial gains can be achieved with efficient arisings management planning.

Arisings should not be disposed of by burning on site unless:

- other options are impracticable; or the material is affected or likely to become affected by a disease or pest for which sanitation is a necessary form of control.
- NOTE 2 Attention is drawn to regulations made under: *The Clean Air Act 1993 and The Plant Health Act 1967, The Weeds Act 1959, and the Wildlife and Countryside Act 1981, in respect of prevention of the spread of plant and soil pests.*

Stump Removal and Retention

- 3.24 Stumps to be removed should 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. Where the depth is greater than 450 mm the areas shall be backfilled with topsoil to the required level.

- 3.25 Options for retention of and management of stumps, particularly those arising from dead trees should be considered as these subterranean deadwood habitats allowances are of great ecological benefit. These stumps should not be treated with any form of pesticide or chemical application as this can be detrimental to the remaining trees, and local ecology.
- 3.26 The height of stumps for retention should be determined by management objectives and or site-specific conditions. Stumps should be left in a safe condition and or location that does not pose a hazard.
- 3.27 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.
- 3.28 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.



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