

LIZARD

Landscape Design and Ecology

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT

**LAND EAST OF CHANTRY MEAD,
DOWNVIEW ROAD, BARNHAM, BOGNOR REGIS**

Stonehurst Properties Ltd

Rev. 00

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Prepared by	WM
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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 Land East of Chantry Mead, Downview Road, Barnham, Bognor Regis.
- 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 Land East of Chantry Mead has been prepared by Will Mills; Assistant Ecologist MSci (Hons) 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 *LLD1880-ARB-DWG-001 – Tree Constraints Plan*, *LLD1880-ARB-SCH-001 – Existing Tree Schedule* and *LLD1880-ARB-DWG-002 – Tree Retention and Protection Plan*.

Existing Site Information

- 1.5 The site consists of the rear gardens of 4 no. properties along Chantry Mead and Downview Road Barnham, Bognor Regis (*Grid Reference: SU 954 052*). The gardens are well-maintained and dominated by lawns with small patches of shrubs and scattered trees. All gardens are lined by garden hedges and fences. The site area is bounded by further gardens and residential properties, and the road Chantry Mead. The site is located c.10.0 metres above sea level. Soils on site are described as *freely draining slightly acid loamy soil*.

Existing Site Vegetation

- 1.6 The site is dominated by amenity grassland interspersed with scattered trees, introduced shrubs and boundary hedgerows. The majority of the trees and hedges on the site are low value, garden trees and hedgerows. Several larger trees of moderate value are also present.

Development Proposal

2.0 IT IS UNDERSTOOD THAT THE PROPOSALS INCLUDE THE DEVELOPMENT OF FOUR NEW DWELLINGS WITH ASSOCIATED ACCESS AND PARKING AREAS.

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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; ground work / general site operations;
 - Construction in proximity to trees;
 - Demolition/ removal of existing structures;
 - Installation of services and underground apparatus;
 - Future maintenance;
 - Removal of existing vegetation not for retention;
 - Removal of protective measures.
- 2.3 The proposed development will require the removal of 20 no. trees and 2 no. hedges. The trees and hedges to be retained are to be protected using tree protection barriers and will not be subjected to any potentially damaging activities resulting from the construction of the proposed development.

Tree Retention and Protection

- 2.4 The trees and hedges below are considered to be viable for retention due to their good health and their distance from the proposed development;

Trees to be retained:

- T04 – *Acer sp.*; Category B;
- T05 – *Malus sp.*; Category C;
- T07 – *Magnolia sp.*; Category C;
- T18 – *Acer sp.*; Category C;
- T19 – *Crataegus monogyna*; Category C;
- T21 – *Cupressus macrocarpa*; Category C;
- T22 – *Malus Sylvestris*; Category C;
- T23 – *Picea sp.*; Category B;
- T26 – *Corylus avellana*; Category C;
- T32 – *Acer camestres*; Category C;
- T33 – *Acer pseudoplatanus*; Category C;
- T34 – *Betula pendula*; Category C;
- T35 – *Taxus baccata*; Category C;
- T40 – *Alnus glutinosa*; Category C, (to be relocated);
- TG41 – *Alnus glutinosa*; Category B;
- T42 – *Quercus robur*; Category B;

Hedges to be retained:

- H01 – Mixed Species Ornamental Hedgerow; Category C
- H31 – Mixed Species Hedgerow; Category C

T40 is currently located within an area of proposed construction, however due to its young age it is likely to survive translocation and thus it is recommended that this tree be translocated to an area that is not being proposed for construction.

Disturbance to Root Protection Areas

- 2.5 The proposed development plans do not involve encroachment into the Root Protection Area of any trees or hedges that are to be retained.

Construction in Proximity to Existing Trees

- 2.6 The proposed development requires the removal of 20 no. trees, however, the remaining trees to be retained are to be adequately protected and are not located close to any proposed construction works. The trees and hedges being retained are currently in residential gardens and are maintained privately via methods such as pruning and crown reduction at the owner's discretion. As the land use of the site is not set to change, any retained trees/hedges are not likely to undergo any increased pressures as a result of the proposed development and will become subject to the maintenance regime of the new owners.

Tree Pruning, Canopy Reduction or Lifting

- 2.7 The proposed development plans do not require any canopy lifting, reduction or pruning of any tree being retained. There are 2no. hedges that are required to be partially removed to allow the construction of the proposed development;
- H08 – Single Species Ornamental Hedgerow; Category C
 - H43 – Single Species Ornamental Hedgerow; Category C.

The hedges listed above are considered to be of low ecological and screening value and as such it is seen that their partial removal will have a negligible effect on local wildlife or the aesthetics of the site.

Removal of Trees and Vegetation

2.8 The 20 no. trees listed below are recommended for removal for the proposed development. They are considered to be of low/moderate ecological value, with any ecological value they hold to be of site importance only. Likewise, the hedges proposed for removal are equally of low ecological value and as such are have a negligible impact on connectivity of within the site and are considered to be of site value only. Thus, any negative effects caused by the removal of these trees and hedges would be adequately mitigated for by a replacement planting scheme as part of the proposed development.

Trees to be removed:

- T09 – *Abies sp.*; Category C;
- T10 – *Crataegus monogyna*; Category C;
- T11 – *Eucalyptus sp.*; Category C;
- T12 – *Picea sp.*; Category C;
- T14 – *Malus sp.*; Category C;
- T15 – *Abies sp.*; Category C;
- T16 – *Pyrus sp.*; Category C;
- T17 – *Malus sp.*; Category C;
- T20 – *Sambucus nigra*; Category C;
- T25 - *Acer camestre*; Category B;
- T27 – *Salix sp.*; Category C;
- T28 – *Carpinus betulus*; Category C;
- TG29 – *Malus sp.* & *Prunus sp.*; Category C;
- T30 - *Salix sp.*; Category C;
- T36 – *Prunus sp.*; Category C;
- T37 – *Prunus sp.*; Category C;

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- T38 – *Acer campestre*; Category C;
- T39 – *Fraxinus excelsior*; Category C.

Hedges to be removed:

- H02 – Mixed Species Ornamental Hedgerow; Category C;
- H08 – *Ligustrum ovalifolium*; Category C;
- H43 – *Prunus laurocerasus*; Category C;

Other vegetation to be removed:

- Mixed ornamental shrubs along the South-West corner of the site.

Tree Loss Mitigation Measures

- 2.9 It has been recommended that only the trees listed in section 2.8 are to be removed as their retention is deemed unfeasible within the proposed development plans. All other trees on site are to be retained and protected by tree protection fencing (*Section 3.0*). Further, the removal of any trees is to be mitigated for with the planting of additional native trees and hedgerows as part of the proposed development.

3.0 ARBORICULTURAL METHOD STATEMENT

Protection and Retention of Existing Trees and Habitats

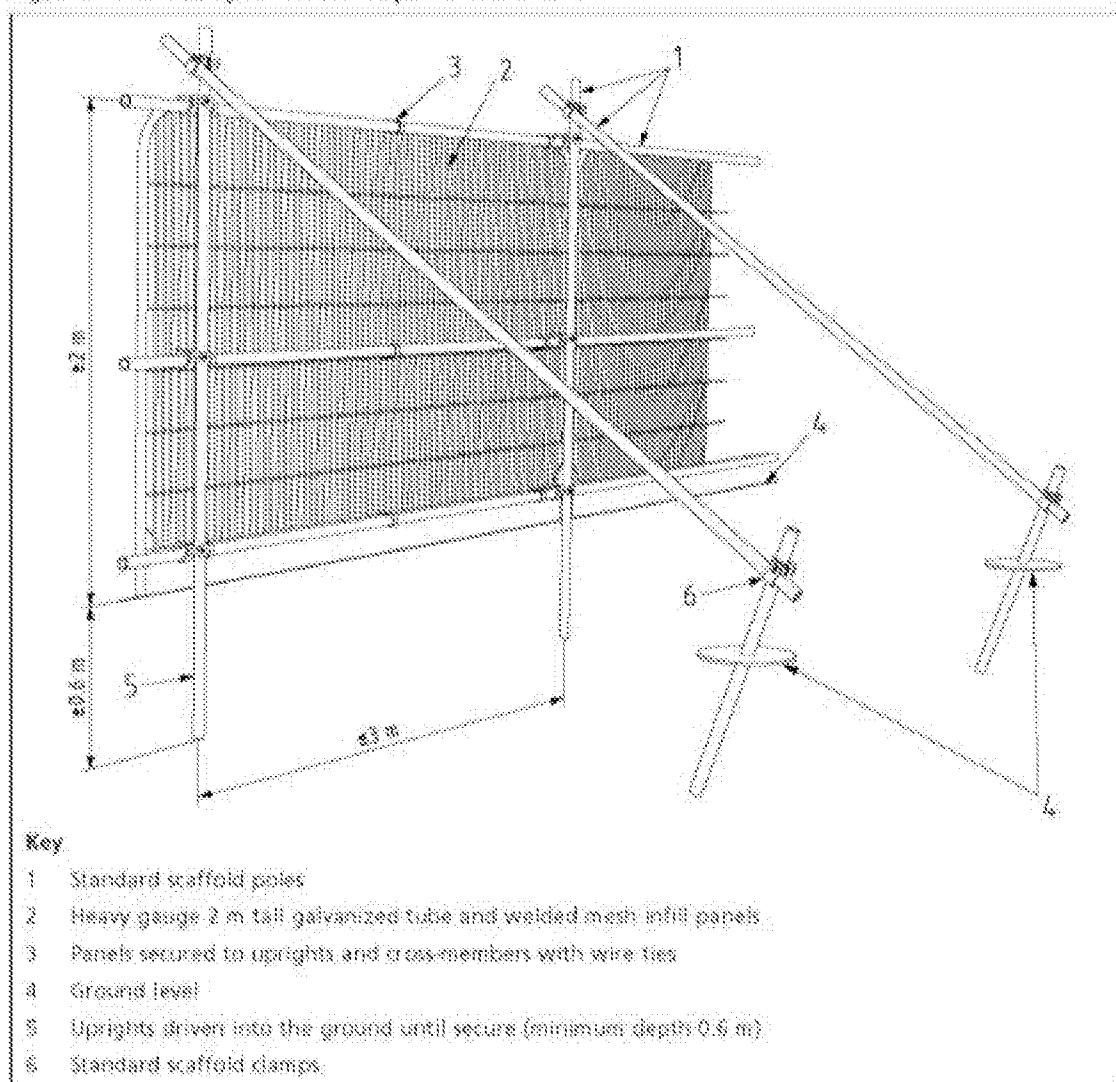
- 3.1 The Contractor shall exercise due care when performing operations beneath the canopy of existing mature trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches.
- 3.2 The Contractor shall train all members of the construction workforce operating 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

- 3.3 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.
- 3.4 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.

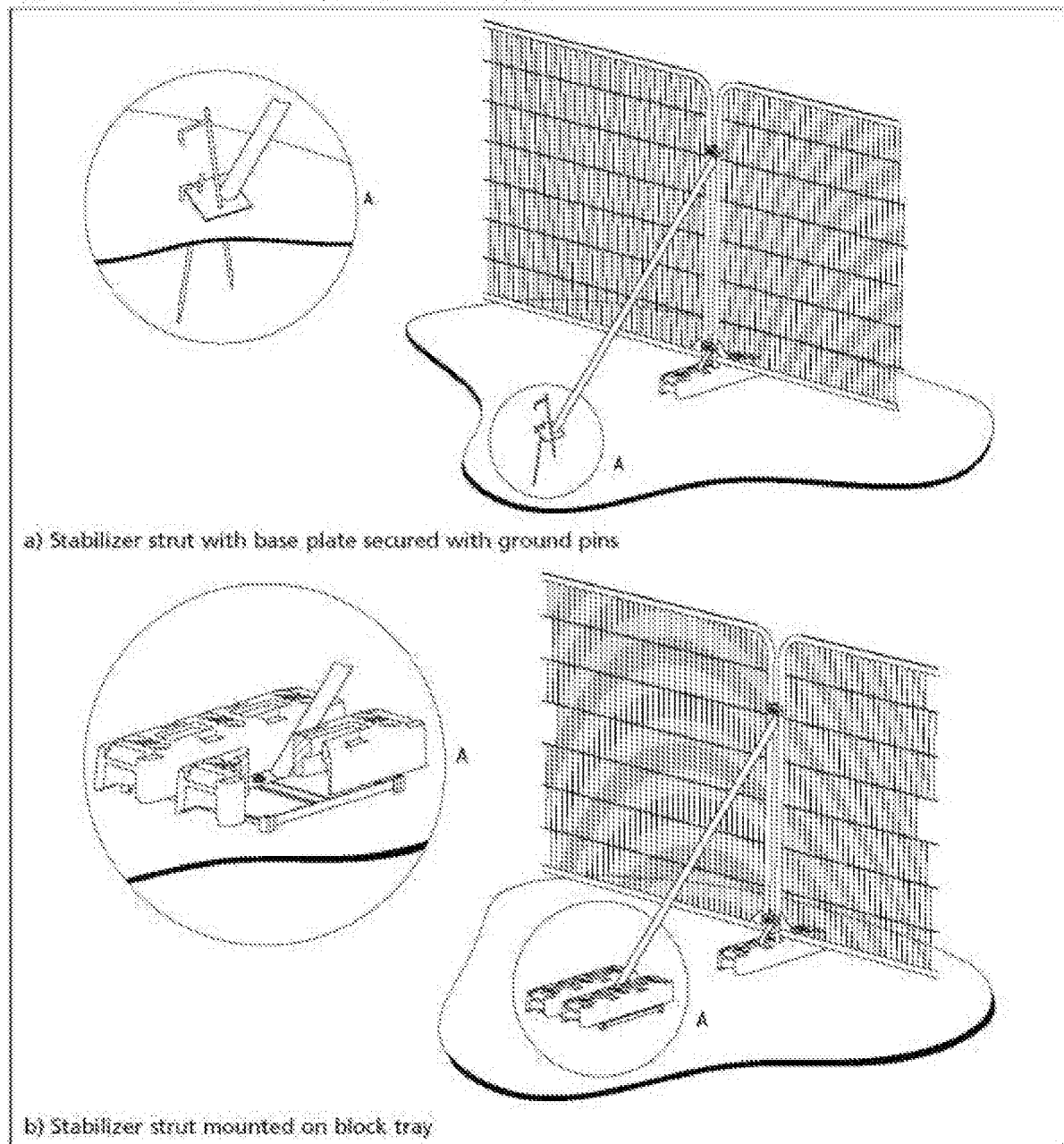
- 3.5 The installed protective barrier shall be 2.0 metres minimum height 'Heras' Welded Wire Mesh Fencing secured to a scaffolding framework, set into the existing ground, and positioned to the outside edge of the existing Tree Root Protection Area. Where existing ground conditions do not allow for 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 *LLD1880-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



- 3.6 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*'.
- 3.7 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.
- 3.8 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.

Ground Protection Measures

- 3.9 Where construction operations require activity within the exposed unmade ground of any existing tree Root Protection Area, a temporary ground protection measures should be implemented allowing for access, limited traffic and operations during the construction period.
- 3.10 A temporary '*Ground Protection Zone*' shall allow for the passage of construction vehicles to the site and should be implemented without intrusion or change of existing ground levels within the defined tree Root Protection Areas of existing trees. The ground protection measures should be implemented prior to the main construction works.
- 3.11 The temporary ground protection measures should remain in place for the duration of the construction period.

3.12 Ground protection must be fit for the purpose of supporting the level of traffic entering or using the site within RPAs without being distorted or causing compaction of underlying soil. The appropriate solutions include:

- For pedestrian movements or the erection of scaffolding within the RPA – single layer of scaffold boards either on top of a driven scaffold frame, to form a suspended walkway, or on top of a compression-resistant layer, e.g. 100 mm depth of woodchip laid onto a geotextile;
- For pedestrian-operated plant (up to a gross weight of 2 t) – proprietary, inter-linked ground protection boards or panels laid on top of a compression-resistant layer, e.g. 150 mm depth of woodchip laid onto a geotextile membrane;
- For vehicular access (exceeding a gross weight of 2 t) – an alternative system subject to engineer's specification appropriate for expected loads, designed in consultation with the project Landscape/ Arboricultural Architect.

3.13 The surface material should be contained with edging type requiring no excavation. Where proposed levels of any new access routes do not ascertain minimum required depth for installation of traditional kerbs, other solutions should be sought:

- Timber edging boards and spikes would be considered appropriate for pathways;
- Timber sleepers should be used as a kerb edge restraint for vehicular areas and anchored with non-intrusive pinning (such as road pins) in order to maintain the existing levels within the specified Root Protection Areas.

Manual Excavation

3.14 Where the development proposals necessitate the tying in and re-grading of existing and proposed levels for vehicular access or include the implementation of underground services such as services, cables, pipe work; a '*Manual Excavation Method*' must be assumed using hand held tools to minimise the impact on existing trees. The excavation should be executed with due care and attention not to disturb exposed unmade ground and any existing tree roots present within it.

- 3.15 Roots over 25mm diameter or those occurring in clumps must not be severed without Arboricultural advice. Tree roots below such size should be cut cleanly using specialised hand tools only and to the minimum extent to allow provision. All exposed roots should be immediately wrapped in dry Hessian to avoid drying. On completion of the excavation and at the earliest opportunity the wrapping should be removed, and the roots surrounded and protected with a loose granular fill (clean washed sharp sand or topsoil free of contaminants or matter injurious to rooting systems) prior to backfilling the excavation to the desired levels.
- 3.16 A single young tree is proposed for relocation within the scheme. This tree shall be manually excavated until it comes easily free from the ground by hand. Any damaged roots are to be cleanly cut and the tree is to be either replanted immediately or wrapped in damp hessian until planting to avoid the roots drying out. The tree shall be checked and watered daily until planted, and watered regularly after to ensure its re-establishment. The tree shall be replanted with local topsoil and staked to hold it in place.

Services in Proximity to Existing Trees

- 3.17 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.
- 3.18 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'*.
- 3.19 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.
- 3.20 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

- 3.21 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.
- 3.22 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.
- 3.23 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*.

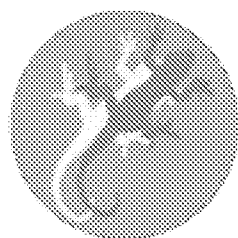
Tree Surgery

- 3.24 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.

Removal of Existing Vegetation

- 3.25 All existing trees to be designated for removal are to be removed in accordance with the *LLD1880-ARB-DWG-001 – Tree Retention and Protection Plan*. All tree work and removal shall be carried out in accordance with *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.

- 3.26 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 reinstalled 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.
- 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.



L I Z A R D

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