



L I Z A R D

Landscape Design and Ecology

DOMUSEA DEVELOPMENTS LTD.

**261 Aldwick Road,
Bognor Regis, West Sussex**

- Arboricultural Impact Assessment and Method Statement
- Residential Redevelopment

Prepared by	JJ
Approved by	JJ
Date	21 st February 2019
Document Reference	LLD1425-ARB-REP-001
Revision	02
Status	Planning Issue

1.0 INTRODUCTION

- 1.1 Domusea Developments Ltd has commissioned Lizard Landscape Design and Ecology to undertake a detailed tree survey and arboricultural impact assessment for the proposed residential redevelopment of the land at 261 Aldwick Road, Bognor Regis (*Grid Reference: SZ 915991 - hereafter referred to as 'the site'*).
- 1.2 A detailed tree survey was undertaken at the site to appraise the existing arboricultural resource within the site and specifically of the development area.
- 1.3 The existing trees within the development site boundary have been surveyed for condition and are recorded within the attached report and identified on the following drawings: *Existing Tree Schedule (LLD1425-ARB-SCH-001)*; *Tree Constraints Plan (LLD1425-ARB-DWG-001)*; and *Tree Retention & Protection Plan (LLD1425-ARB-DWG-002)*.
- 1.4 The *Tree Retention and Protection Plan* illustrates the impact of the proposed development upon the existing trees and sets out where vegetation is proposed to be removed. The plan specifically identifies measures for tree and root protection wherever existing trees and vegetation are proposed to be retained within the proposals.
- 1.5 A number of existing trees within the vicinity of the development proposals could potentially be impacted upon by the development proposals. The existing retained trees and vegetation are to be protected in accordance with the guidance contained within *BS 5837: 2012 – 'Trees in Relation to Design, Demolition and Construction – Recommendations'*.
- 1.6 The status, impact, and protective measures upon the existing trees and vegetation within the site affected by the development proposals are subject to the protective measures and construction method statement detailed in the following Arboricultural Method Statement.

2.0 Arboricultural Impact Assessment

Development Proposals

- 2.1 The development proposals for the site area of 261 Aldwick Road, Bognor Regis include redevelopment of the existing residential site area with 4 no. dwelling houses laid out across the site area. A new access driveway for the scheme proposals is proposed to the western edge of the existing site area running north to south to the rear of the proposed dwellings to the southern sector of the site area. The scheme includes individual property driveways; car parking areas; hard landscape areas; and residential garden areas. The existing significant trees are proposed to be retained within the final development landscape scheme. The scheme shall also include new garden tree planting proposals within the residential landscape in order to enhance bio-diversity, species diversity, and tree cover within the site final development landscape scheme.

Site Context

- 2.2 The existing site area is located within the residential area of Aldwick Road, Bognor Regis adjacent to the Lower Bognor Road roundabout. The existing property of 261 Aldwick Road is set within a moderately sized garden area set back from the road and includes existing dwelling house; front hard landscape driveway; and rear domestic garden area. To the western edge of the property there are a handful of scattered tree species; within the site area; and within the car park area of the adjacent block of flats to Malmayne Court. The remainder of the garden area is generally set to mature garden shrub planting areas.

- 2.3 The area of Aldwick, Bognor Regis is covered by significant areas of *Tree Preservation Order* as follows; *TPO Reference; TPO/AW/41/10; TPO/AW/152/10; and TPO/01/98/AW* and *Bognor No.2*, but the property is not located within a *Conservation Area*.
- 2.4 *T01 – Populus x canadensis (Black Poplar)* is located to the south-western edge of the site area. The tree is a tall, upright, wide-spreading Poplar tree species located to the south-western edge of the rear garden area up against the fence line. The tree has suckering lower stems, and the tree spread is inhibited to the north by the adjacent beech and ash trees growing along the adjacent western site boundary. The tree is within the site area up against the existing fence line.
- 2.5 *T02 – Fagus sylvatica (Beech)* is located within the adjacent car park area of the block of flats to the west within the soft landscape areas of Malmayne Court. The tree is a tall, upright beech tree growing between the dominant ash tree to the north and the poplar tree to the south. The tree is located within the adjacent car park area for the block of flats and is located 2.0 - 2.50 metres from the western fence line. The growth of the tree is inhibited by the adjacent trees surrounding within the boundary tree line.
- 2.6 *T03 – Fraxinus excelsior (Ash)* is located within the adjacent residential site of Malmayne Court. The tree is a wide-spreading ash tree within the adjacent block of flats and associated car park area. The tree has long-arching upright branches, with a wide and open canopy inhibiting growth of the adjacent beech tree to the south. The tree is located within the adjacent car park area for the block of flats and is located 2.0 - 2.50 metres from the western fence line.
- 2.7 *T04 – Quercus cerris (Turkey Oak)* is located to the property frontage within the adjacent garden area of Malmayne Court. The Turkey oak tree is mature, tall, wide-spreading, and upright with multiple vertical stems emanating from the central tree trunk. The canopy spread is accentuated to the south with arching horizontal branches by contrast to the main upper canopy. The tree has a feathery open form of long arching branches to the ends.
- 2.8 *T05 – Acer pseudoplatanus (Sycamore); T06 Castanea sativa (Sweet Chestnut); and T07 - Castanea sativa (Sweet Chestnut)* are located to the north-eastern edge of the site area within the neighbouring property set some 2.5 metres into the adjacent front garden area and overhang the eastern development boundary. The trees have developed as a mature tree group within the adjacent property; tall and wide-spreading and are subject to a *Tree Preservation Order (TPO/01/98/AW)*
- 2.9 The above vegetation has been surveyed and recorded in vicinity to the proposed development and the tree root protection areas established such that arboricultural impacts consequential of the proposed development may be assessed and mitigated. The mitigation proposals, including tree protection fencing and ground protection measures, are indicated within *Tree Retention & Protection Plan (LLD1425-ARB-DWG-002-TPP)*. The potential impacts are described below, and mitigation techniques are provided within the following *Arboricultural Method Statement (AMS)* in accordance with *BS 5837; 2012 – ‘Trees in Relation to Design, Demolition and Construction – Recommendations’*.

Arboricultural Impact Assessment – Scheme Proposals

- 2.10 The development proposals for the site area of 261 Aldwick Road include redevelopment of the existing residential site area with 4 no. dwelling houses laid out across the site area. A new access driveway for the scheme proposals is proposed to the western edge of the existing site area running north to south to the rear proposed dwellings to the southern sector of the site area. The scheme includes individual property driveways; car parking areas; hard landscape areas; and residential garden areas. The existing significant trees are proposed to be retained within the final development landscape scheme. The scheme shall also include new garden tree planting proposals within the residential landscape in order to enhance bio-diversity, species diversity, and tree cover within the site final development landscape scheme.
- 2.11 *T01 – Populus canadensis (Black Poplar)* within the site area to the western site edge is proposed to be protected with tree protective fencing throughout the construction period where the adjacent access driveway and proposed dwelling house are proposed to be implemented within the scheme proposals. The proposed construction of the existing property shall need a 1.50 metre construction zone around the edge of the proposed dwelling in order to erect scaffolding and implement brickwork for construction access.
- 2.12 Where construction work is proposed and required within the defined tree root protection area of the existing tree; ground protection measures shall need to be implemented within the tree root protection area in order to protect the existing ground at the base of the tree. The ground within this construction zone shall need to be protected with a construction operation zone in order to retain and protect the existing root plate of the adjacent tree during the construction phase. A manual excavation method shall be required for a small section of the proposed building foundations of Plot No. 03 adjacent to the eastern edge of the tree in order to implement the building foundations. A 'no-dig' construction method over existing ground levels shall also be required for the proposed access driveway alongside the proposed dwelling house within the tree root protection area of the existing tree.
- 2.13 **Tree Surgery Works:** the tree is proposed to be crown-reduced to the eastern edge of the tree canopy by 1.50 metres and crown-lifted to 3.50 metres height in order to facilitate construction and future use of the rear garden area adjacent to the proposed dwelling house. No height should be removed from the tree through tree surgery works.
- 2.14 *T02 – Fagus sylvatica (Beech)* is located within the adjacent car park area of the block of flats to the west within the soft landscape areas of Malmayne Court. The tree is proposed to be protected to the western site boundary with tree protective fencing. Where construction work is proposed and required within the defined tree root protection area of the existing tree; ground protection measures shall need to be implemented within the tree root protection area in order to protect the existing ground at the base of the tree adjacent to the proposed construction. The ground within this construction zone shall need to be protected with a construction operation zone in order to retain and protect the existing root plate of the adjacent tree during the construction phase.

- 2.15 *T03 – Fraxinus excelsior (Ash)* is located within the adjacent residential site of Malmayne Court. The tree is proposed to be protected to the western site boundary with tree protective fencing. Where construction work is proposed and required within the defined tree root protection area of the existing tree; ground protection measures shall be implemented within the tree root protection area in order to protect the existing ground at the base of the tree. The ground within this construction zone shall need to be protected with a construction operation zone in order to retain and protect the existing root plate of the adjacent tree during the construction phase. A 'no-dig' construction method shall be required for the proposed access driveway alongside the proposed dwelling house within the tree root protection area of the existing tree.
- 2.16 *T04 – Quercus cerris (Turkey Oak)* is located to the property frontage within the adjacent garden area of Malmayne Court and is proposed to be protected with tree protective fencing throughout the construction works where the adjacent access driveway is proposed to be implemented within the scheme proposals.
- 2.17 Where construction work is proposed and required within the defined tree root protection area of the existing tree; ground protection measures shall be implemented within the tree root protection area in order to protect the existing ground at the base of the tree. The ground within this construction zone shall need to be protected with a construction operation zone in order to retain and protect the existing root plate of the adjacent tree during the construction phase. A 'no-dig' construction method shall be required for the proposed access driveway alongside the proposed dwelling house within the tree root protection area of the existing tree.
- 2.18 **Tree Surgery Works:** the tree is proposed to be crown-reduced to the eastern edge of the tree canopy by 1.00 metres and crown-lifted to 3.50 metres height in order to facilitate construction and future use of the access driveway adjacent to the proposed dwelling house. No height should be removed from the tree canopy.
- 2.19 *T05 – Acer pseudoplatanus (Sycamore); T06 Castanea sativa (Sweet Chestnut); and T07 - Castanea sativa (Sweet Chestnut)* are located to the north-eastern edge of the site area within the neighbouring property set some 2.5 metres into the adjacent front garden area and overhang the eastern development boundary. The trees have developed as a mature tree group within the adjacent property; tall and wide-spreading and are subject to a Tree Preservation Order (TPO/01/98/AW).
- 2.20 Where construction work is proposed and required within the defined tree root protection area of the existing tree; ground protection measures shall need to be implemented within the tree root protection area in order to protect the existing ground at the base of the tree. The ground within this construction zone shall need to be protected with a construction operation zone in order to retain and protect the existing root plate of the adjacent tree during the construction phase. A manual excavation method shall be required for a small section of the proposed building foundations of Plot No. 02 adjacent to the eastern edge of the tree in order to implement the proposed building foundations. A 'no-dig' construction method shall also be required for the proposed access driveway alongside the proposed dwelling house within the tree root protection area of the existing tree.
- 2.21 All existing hard landscape and sub-base materials above existing tree root protection areas area to be retained in situ for the duration of construction phase as long as possible on site in accordance with BS 5837:2012 - '*Trees in Relation to Design, Demolition and Construction - recommendations*' in order to protect the tree root protection areas of the existing trees.

- 2.22 *A Manual Excavation Method* shall need to be implemented to allow for the construction of Plot No. 03 and the proposed building foundations within the existing tree root protection area of the existing Poplar tree. The excavation shall be undertaken with due care with hand held tools only. All exposed roots shall be covered with hessian sacking to prevent desiccation and shall be prevented from injurious contact with post concrete using an impermeable membrane wrapped to the excavation pit sides. No roots shall be severed greater than 25mm thickness without specialist arboricultural advice.
- 2.23 All exposed roots shall be covered with hessian sacking to prevent desiccation and shall be prevented from injurious contact with concrete haunching using an impermeable membrane wrapped to the excavation sides. Access and operations shall be made from the existing hard surfaced car park area.
- 2.24 No operations / construction access shall occur within the area demarked by the tree protection fencing as specified within the *Tree Retention & Protection Plan (LLD1425-ARB-DWG-002)*; and due regard shall be given to avoid damage to overhanging canopies near the works.
- 2.25 The proposed construction of the dwelling house to Plot No. 01 / 03 shall need a 1.50 metre construction operation zone around the edge of the proposed dwelling to erect scaffolding and implement brickwork. The ground within this construction zone shall need to be protected with a construction operation zone to retain and protect the existing root plate of the adjacent tree during the construction phase.
- Removal of Existing Vegetation / Shrub and Scrub**
- 2.26 Removal of the scrub and shrub vegetation within tree root protected areas shall be carried out in accordance with *BS3998: 2010 – ‘Tree Work: Recommendations’*. Protection of existing vegetation shall thereafter be secured through the implementation of Tree Protection Fencing in accordance with *BS 5837; 2012 – ‘Trees in Relation to Design, Demolition and Construction – Recommendations’*.
- 2.27 Removal of existing vegetation shall be mitigated through re-provision of tree cover and habitat creation within the final development landscape scheme.
- 2.7 All protection measures are to be in accordance with *BS 5837; 2012 – ‘Trees in Relation to Design, Demolition and Construction – Recommendations’*; and are to be set out as indicated within the *Tree Retention & Protection Plan (LLD1425-ARB-DWG-002)*. The method for protection and stages of work are set out below. Additional information relating to tree condition is provided within the *Existing Tree Schedule (LLD1425-ARB-SCH-001)* and on the following drawing; *Tree Constraints Plan (LLD1425-ARB-DWG-001)*.
- Tree Surgery Works Proposed – Boundary Tree Planting**
- 2.8 Tree surgery measures and works have been identified. Any significant defects found in the trees during the scheduled work shall be reported to the Landscape Architect / Arboricultural Consultant. All scheduled and arising tree work shall be undertaken in accordance with *BS3998: 2010 – ‘Tree Works Recommendations’*.
- 2.9 The existing Poplar tree (*T01 – Populus x canadensis*) is proposed to be crown-lifted to 3.5 metres height above the existing garden ground levels in order to provide construction access under the base of the tree within the rear garden area and crown-reduction to the western aspect of the tree canopy by 1.50 metres depth on order to reduce the impact of the construction works upon the canopy of the existing tree and also the proximity of the tree canopy within the development landscape scheme in relation to the proposed adjacent dwelling house of Plot No. 03. No height is proposed to be removed from the tree canopy through tree surgery works.

- 2.10 *T04 – Quercus cerris (Turkey Oak)* is located to the property frontage within the adjacent garden area of Malmayne Court. The tree is proposed to be crown-reduced overall to the eastern edge of the tree canopy by 1.00 metres and crown-lifted to 3.50 metres height in order to facilitate construction and future use of the access driveway adjacent to the proposed dwelling house. No height is proposed to be removed from the tree canopy through tree surgery works.

3.0 Stages of Work / Programme

- 3.1 The site development proposals shall involve the following site operations that could impact upon the existing tree / vegetation cover;
- *Removal of existing vegetation not for retention;*
 - *Contractor movements; site access and operations; storage and compound;*
 - *Demolition of existing areas of hardstanding;*
 - *Construction of proposed building and associated ground work operations;*
 - *Implementation of services and utilities.*

4.0 Arboricultural Method Statement

Contractor Movements; Site Access / Operations; Storage / Compound Areas

- 4.1 The contractor site compound shall be located outside of the defined tree root protection areas as indicated on drawing; *LLD1425-ARB-DWG-002 - Tree Retention & Protection Plan*.
- 4.2 The contractor's site compound shall be located so as to not incur damage or injury to the tree root systems or canopy of any existing trees or vegetation within or adjacent to the site, in accordance with *BS5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'*. All operations associated with the usage of the compound area shall be undertaken with due care and attention to negate damage of the surrounding environment.
- 4.3 Access to the site area shall be made at all times via the existing entrance from Aldwick Road. Pre-construction vehicular movement to facilitate the removal of existing vegetation shall be limited to the minimum requirement in order to fulfil the vegetation removal works and no vehicular access shall be permitted over unmade ground within the defined tree root protection area of existing trees to be retained and protected. Once the tree removal and tree surgery works has been completed the tree protective fencing works proposed shall be put in place. Vehicular movements during the construction period shall be limited to the areas of existing hard ground and ground outside tree root protection areas only.
- 4.4 All site clearance / demolition works shall be undertaken once the tree protective fencing measures have been put in place in order to protect existing tree canopies and tree root protection areas from vehicle movements and material storage.
- 4.5 All site operations and construction procedures for the duration of the construction period shall seek to protect the existing site vegetation and tree root protection areas in accordance with *BS 5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'*.

Removal of Existing Vegetation

- 4.6 All existing trees and vegetation designated for removal are to be removed in accordance with the Tree Protection and Retention Drawing *Tree Retention & Protection Plan*. All tree work and removal shall be carried out in accordance with *BS5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'* and *BS3998: 2010 – 'Tree Work: Recommendations'*. 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, and tree surgery works undertaken 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 and protected.
- 4.7 Stumps shall be removed and cut away so that the top of the tree 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 / Arboricultural Consultant. Where the depth is greater than 450 mm the areas shall be backfilled with topsoil to the required level.
- 4.8 The removal of shrub or scrub material within the tree 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 tree root protection area and reduce any damage to existing tree roots within the protected tree root zone. Adjacent trees shall not be utilised as anchors or levers to facilitate the removal of adjacent vegetation.

Tree Surgery

- 4.9 Tree surgery measures and works have been identified. Any significant defects found in the trees during 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 *BS3998: 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.

Nesting Birds / Roosting Bats

- 4.10 All trees / vegetation to be cut should be checked for the presence of nesting Birds / roosting bats prior to clearance. All nesting birds / roosting bats should be left in situ and undisturbed during the tree surgery and vegetation clearance works.

Tree and Vegetation Management

- 4.11 For tree and vegetation retention and removal proposals refer to the attached *Existing Tree Schedule and Schedule of Tree Works* report. For tree and vegetation management proposals refer to the tree surgery works, and management prescriptions contained within *Existing Tree Schedule and Schedule of Tree Works*.

Ongoing Inspection and Maintenance of Existing Vegetation

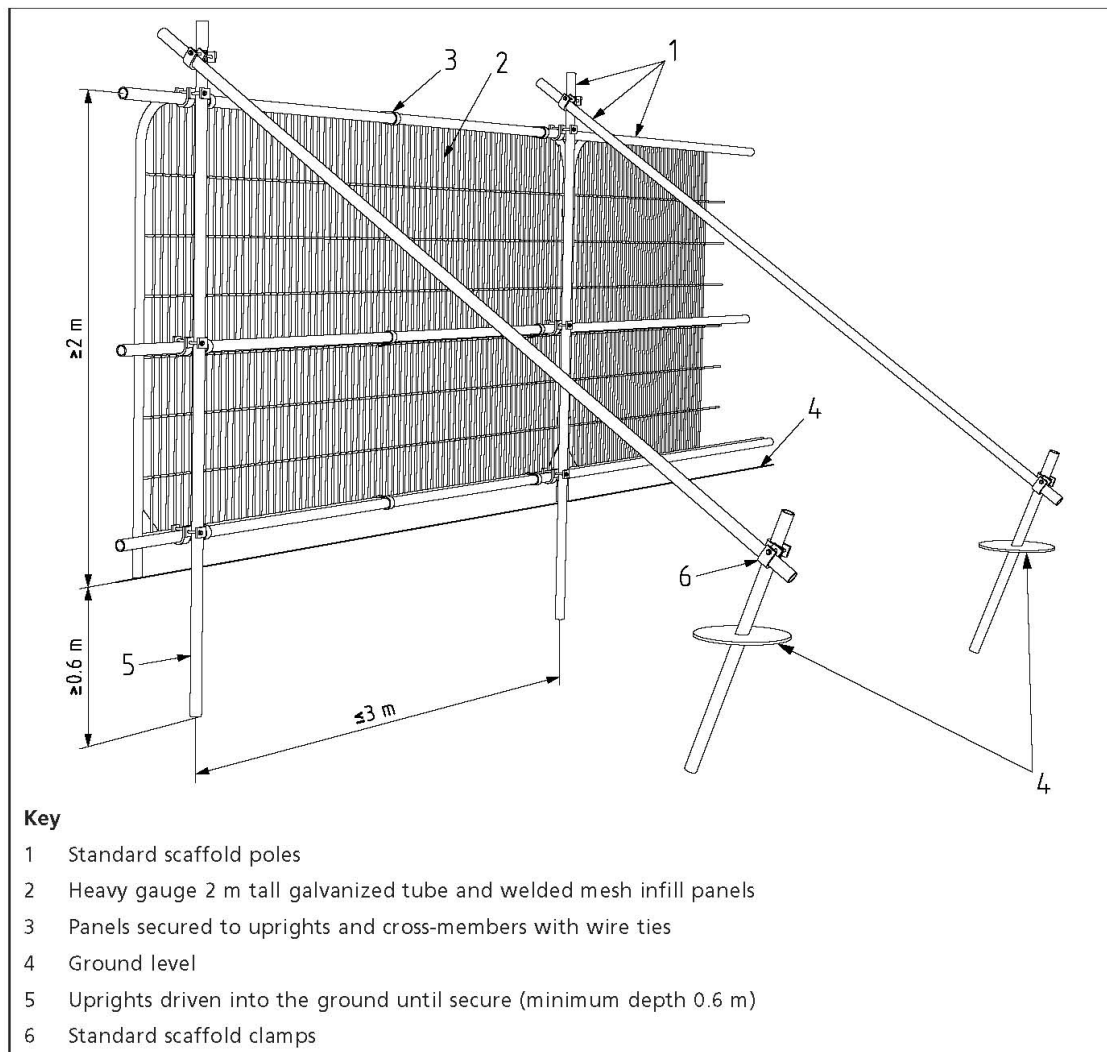
- 4.12 All retained vegetation on the site shall require ongoing regular inspection (*annual inspection recommended*) and any remedial works undertaken as required to maintain trees in a safe and healthy state.

Protection and Retention of Existing Vegetation

- 4.13 The contractor shall exercise extreme care when performing operations beneath the canopy of existing mature trees and vegetation and within the specified tree root protection areas designated for protection and avoid always damage to the roots, trunk and branches of existing trees proposed to be retained.

- 4.14 All excavations, cultivation, and grading beneath the canopy of existing mature trees and within the specified tree root protection areas of the existing trees and vegetation shall be carried out using hand tools, taking care not to damage or disturb any existing tree roots.
- 4.15 All trees to be retained on site shall be protected with fencing erected around the area of mature vegetation in accordance with *BS5837: 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 tree root protection areas.
- 4.16 The installed protective fencing shall be 2.0 metres 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. The fencing should be strained, and fixed to existing fences, walls, knee rails where possible to provide a complete protected area (*Refer to Figure No. 2 and Figure No. 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 the *Tree Retention & Protection Plan*.
- 4.17 Day-glo ribbons shall be maintained during the main works by the 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 stating '*Construction Exclusion Zone – NO ACCESS*'.

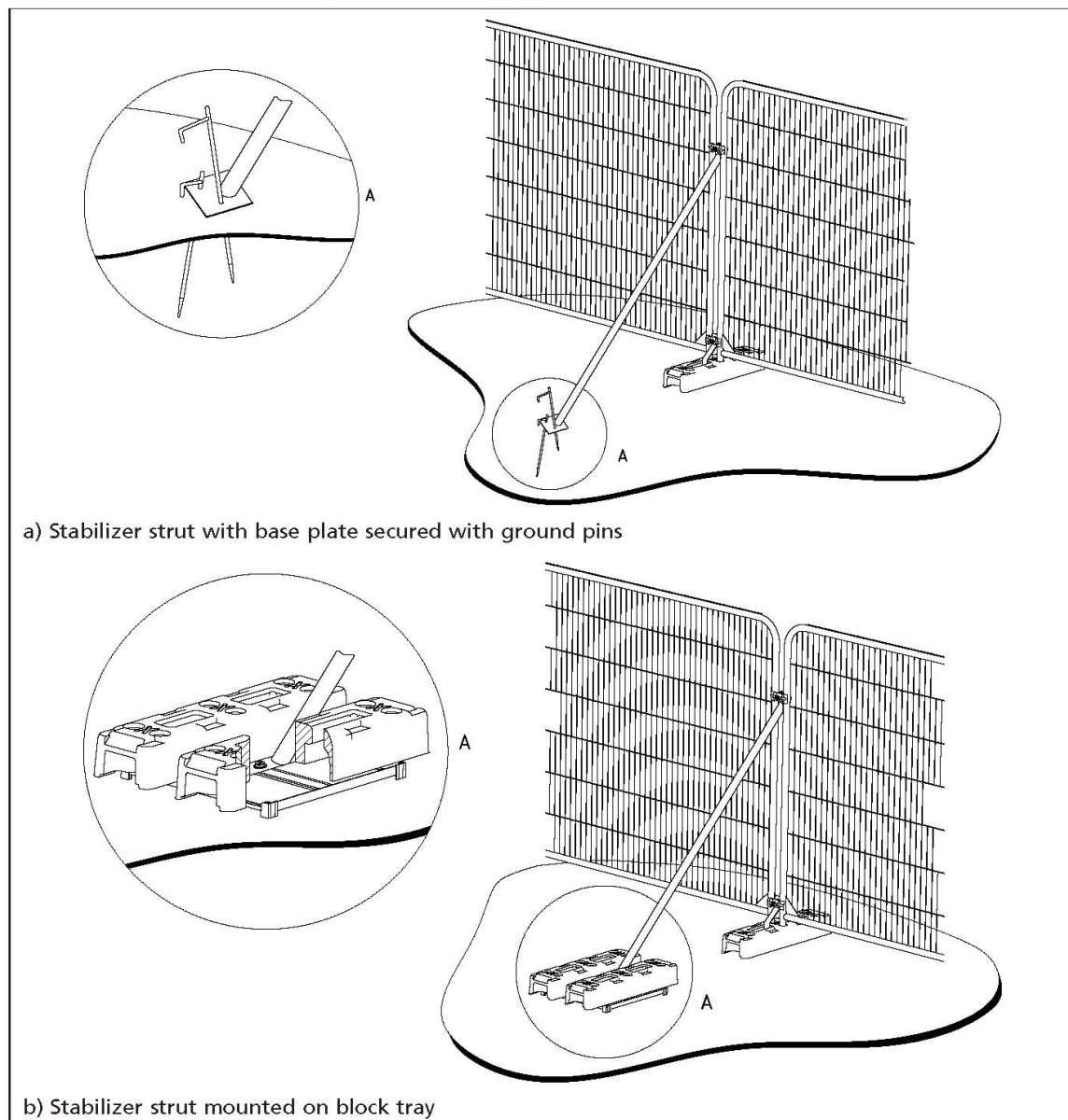
Figure 2 Default specification for protective barrier



© The British Standards Institution 2012

- 4.18 All such fencing 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 may occur prior to the inspection of the installed tree and ground protection by the Landscape Architect / Arboricultural Consultant. Repositioning of the protective fencing during the course of the contract as the contract works progress shall need prior agreement with the Landscape Architect / Arboricultural Consultant.

Figure 3 Examples of above-ground stabilizing systems



© The British Standards Institution 2012

- 4.19 Within the protected area 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.*
- 4.20 At the end of the contract period, the contractor shall remove the tree protective fencing from the site. All retained vegetation shall be healthy and thriving at the handover date.

Heras – Anti-climb Smart Weld Panel Fencing

- 4.21 Specification: *Galvanised anti-climb mesh; 2.0m height x 3.5m width; 13.8kg weight.*

Ground Protection; Tree Protection Zone - Operation Zone During Construction

- 4.22 Existing hard landscape surfacing materials shall be left undisturbed and retained during the construction period for as long as physically possible in order to protect the tree root protection area of the existing trees to be retained. Where necessary for the groundworks construction stage; existing surface hard landscape materials and sub-base layers shall only be removed carefully by hand within the existing tree root protection areas down to the base of the existing sub-base design only and shall be the minimum required for the construction. The root zone of the existing tree should not be impacted by the proposed construction.

- 4.23 Where construction operations require activity within the exposed unmade ground of any existing tree root protection area, a temporary construction protection zone shall be implemented allowing for construction operations only, but no vehicular access close to existing trees during the construction period. The temporary ground protection for construction operations only, but no vehicular access, shall comprise a single thickness of ground protection mats supported upon a retained non-compressible layer (*woodchip / Type 3*) placed above a geo-textile separation membrane in order to protect existing tree roots.

Ground Protection; Tree Protection Zone – Manual Demolition / Excavation

- 4.24 Where the development proposals necessitate the removal of existing areas of hardstanding, the excavation of building foundations; the tie-ing in and re-grading of existing and proposed levels for hard landscape areas; or include the implementation of underground services such services, cables, pipe work within the tree root protection areas of existing trees; a manual excavation method must be implemented using hand held tools to minimise the impact on existing trees and roots. The excavation shall be executed with due care not to disturb exposed unmade ground and any existing tree roots present within it.

- 4.25 Roots over 25mm diameter or those occurring in clumps must not be severed without arboricultural advice. Tree roots below such size may 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 tree 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. All exposed roots shall be prevented from injurious contact with concrete or associated leachates using an impermeable membrane wrapped to the excavation sides.

- 4.26 Existing service runs should always be used wherever possible. Where the proposed routing of services impinges upon a tree 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.

- 4.27 Phasing of the construction works should be considered to minimise the requirement for ground protection and avoid vehicular movements over unmade ground.

Tree Protection Zone - No-Dig Construction - Proposed Driveway

- 4.28 A 'No-Dig' Construction method shall be employed over existing ground levels and the root plate of existing trees in order to avoid damage to existing tree roots and localised compaction of subsoil within the tree root protection areas of trees T 01, T03, and T 04.
- 4.29 Existing surfacing materials shall be left undisturbed and retained during the construction period for as long as physically possible in order to protect the tree root protection area of the existing trees to be retained; existing soft ground layers; grass sward and loose topsoil shall be removed carefully by hand within the existing tree root protection areas.
- 4.30 A ground stabilising geo-mesh ('TDP SN20 GeoGrid' or equal and approved), shall be rolled out over the existing ground level and evenly covered with a No Fines - Open Graded Aggregate (in accordance with Highways Agency Specification; Clause 805 (Type 3) or equal and approved.) The granular fill shall be incorporated within a 3-dimensional GeoCell (Terram Geocell 250/100 or equal and approved) and shall ensure a minimum supportive construction depth of 100 mm. A geo-textile filter membrane is to be laid over the granular fill construction (Geotextile filter membrane to be TDP 115 Non-woven Geotextile Fabric or equal and approved.)
- 4.31 A permeable system and construction method shall be installed over the prepared sub-base layers. A bedding layer of crushed aggregate (to BS EN13242; range size; 4 - 14 mm) is to be laid level and compacted above the Geotextile filter membrane to a depth of 25 mm. A permeable top layer, which could consist of permeable tarmacadam, resin-bound gravel or permeable block-paving shall then be installed above the bedding layer to create the access driveways.

5.0 Arboricultural Method Statement – Notes; General

- 5.1 It is an offence to cut down, top, lop, uproot, wilfully damage, or wilfully destruct any of trees subject to statutory protection of *Tree Preservation Orders (TPO)* without the local planning authority's written consent. Consent shall be granted by the LPA prior to any of the above operations taking place (Refer also to NPPF PPG 'Tree Preservation Orders and Trees in Conservation Areas')
- 5.2 The principles and recommendations of *BS5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'* shall be followed to prevent damage or undue stress upon the existing trees, soils and roots potentially impacted upon by the development proposals.
- 5.3 Destruction of soil structures through soil compaction, excavation or contamination shall be avoided at all times within the tree root protection areas. Physical damage to existing trees to be retained; roots, stems, branches shall be prevented wherever possible.
- 5.4 All tree protection measures are to be carried out, on site and within the development proposals, in accordance with the relevant approved drawings accompanying this method statement.
- 5.5 Arboricultural Supervision is recommended at the following stages of work;
- *Installation of tree protection measures;*
 - *Method statement briefing for site staff;*
 - *Supervision of the demolition / construction stages within tree root protection areas;*
 - *Removal of tree protection measures.*

- 5.6 The loss through development of existing trees may occasionally be unavoidable. Wherever existing trees are removed to accommodate development, contingency should be made for relocation of removed trees if possible or the replanting of young trees with suitable species for the site location where relocation of existing trees is not viable.
- 5.7 The phasing of works might be appropriate in order to implement the proposed development. Where the construction operations impact upon existing trees to be retained the trees shall be fully protected where possible in accordance with *BS 5837: 2012 - 'Trees in Relation to Design, Demolition and Construction - Recommendations'* for the duration of the construction period. The phased retraction of construction operations may allow for tree protection measures to be withdrawn / re-sited. The re-alignment or withdrawal of any Tree Protection Measure shall only be permitted with the agreement of the Project Arboricultural Consultant / Local Planning Authority.



LIZARD

Landscape Design and Ecology

The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7LH
T. 01903 216033 E. lizard.landscape@btconnect.com W. lizardlandscapeecology.com