



LIZARD

Landscape Design and Ecology

ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT

CROFT WORKS

52 MILL LANE, RUSTINGTON, WEST SUSSEX

ECE Architecture

Rev. 00

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Contents

1.0	Introduction.....	4
2.0	Arboricultural Impact Assessment	6
3.0	Arboricultural Method Statement.....	9

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 Croft Works, 52 Mill Lane, Rustington, West Sussex.
- 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 Croft Works, 52 Mill Lane, Rustington, West Sussex has been prepared by Louise Barker; Ecologist 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 *LLD2098-ARB-SCH-001 – Existing Tree Schedule* and *LLD2098-ARB-DWG-002 – Tree Retention and Protection Plan*.

Existing Site Information

- 1.5 The site area is located on the eastern side of the B2187 Mill Lane, north of the village of Rustington and 300m south of the A259 which is lined with commercial units. The site entrance is located to the west, off Mill Lane, down a single-track roadway leading to a hard-standing area containing workshop and garage outbuildings along the north eastern and western boundary. The site area is approximately four metres above sea level and measures approximately 0.08ha. The surrounding landscape is residential which extends into the wider landscape in every direction.

Existing Site Vegetation

- 1.6 The only vegetation on-site is an elder shrub of poor condition and no value, which has self-seeded behind one of the buildings. The shrub is heavily constrained and of poor condition and no value. The shrub has not been included within the survey.
- 1.7 A large, over-mature hornbeam tree is present within an adjacent pub garden and leans over the site from the south-west (T01). Although large the tree is heavily constrained and in decline, and therefore considered of low quality and value. Several small, low-value hawthorn trees are present in adjacent gardens (TG02) but are too small to be impacted by the proposals.

Development Proposal

- 1.8 The development proposals include demolishing the existing structures and the construction of 4no. new semi-detached 2no. bed residential properties with associated gardens and parking.

2.0 ARBORICULTURAL IMPACT ASSESSMENT

Impacts of Development Proposals on Existing Vegetation

- 2.1 There is no vegetation on the site (barring an elder shrub), with potentials for impacts upon trees limited to a single over-mature hornbeam in an adjacent pub garden (T01).
- 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;
 - Demolition/ removal of existing structures;
 - Future maintenance.
- 2.3 The tree is located c. 4.0 m off-site, but the nominal RPA extends well into the site. The tree is surrounded by hard surfaces, and the site is entirely covered in long-standing buildings and hard surfaces. It is considered unlikely that significant feeder roots would be present in the site, although small numbers of structural roots may have grown. Roots are most likely to be present within the pub garden and an adjacent residential garden to the south. The crown leans over the site above a building proposed for removal.
- 2.4 There are four main potential impacts of the proposals. These are listed in descending order with the greatest likely impact first.
- 2.5 Damage to the crown from demolition of the building adjacent. The tree's crown hangs low towards the existing building. In the absence of mitigation, demolition vehicles would likely collide with the crown and cause damage to a number of small limbs, resulting in reduced vitality and entry points for decay.
- 2.6 Damage to roots during demolition of the building adjacent, removal of hard surfaces and replacement with soft landscape. The tree may have limited roots under the building on-site; unsympathetic demolition may crush these roots, or cause exposure and drying, ultimately causing structural failure or decay of the tree.

- 2.7 Current and future desire to prune the tree to remove overshadowing and perceived risk. The tree hangs heavily over the site; to enable construction, crown-lifting and reduction would be required to facilitate the proposals. Residents of the proposed dwellings would likely be concerned about leaf drop and the safety of the tree, and given the crown leans heavily over their proposed boundaries, there would be little protection against unscrupulous tree surgery works. Poor or excessive tree surgery works would further weaken a declining tree and create new ingress points for decay.
- 2.8 Alterations to soil conditions within the RPA. Changes to the air and gas flow between air and soil on the adjacent site is likely to be positive for the tree, but may also disturb pathogens and the hydrology. The impact of this is considered difficult to predict and generally insignificant.
- 2.9 Existing services should be re-used for the proposed dwellings; where not possible new services shall run from Mill Lane or Fircroft Crescent, both well away from any RPAs. Access shall be from the existing access on Mill Lane, which will be resurfaced. There are no likely impacts from access or services.

Avoidance, Mitigation and Compensation

- 2.10 The risk of damage to the crown can adequately be mitigated by judicious light pruning pre-works (crown-lift from 3.0 m to 4.0 m clear stem over the building only). This would also reduce the overshadowing and be an opportunity to remove the numerous minor pieces of deadwood. Given the amount of deadwood currently, a number of small extra cuts in accordance with BS3998 are not considered significant. The works would make the tree slightly more even and may encourage backbudding to the south where there is good space for growth.
- 2.11 The risk of damage to roots can adequately be avoided by carefully breaking up hard surfaces where necessary and carting these away manually without any scraping or digging by excavator. The site is completely fenced already and as such no barrier are required. This will be done from existing hard surfaces away from the tree. Demolition will only remove surfaces and foundations where these would project above ground, or create a poor environment for plant growth. Other subsoil structures can be left in-situ.
- 2.12 Any roots found would be wrapped in hessian and covered with traffic bollards and barrier tape to highlight their location. Following removal of hard surfaces, roots can be unwrapped and carefully covered in topsoil. New hard surfaces will be outside the RPA.

- 2.13 The tree is in decline, and as such the initial tree surgery works should maintain the crown at an acceptable size for the remainder of the tree's useful lifespan. New soft landscape to the south of the site will provide a good rooting environment for this tree or any replacement in the future.
- 2.14 The proposals include new tree and shrub planting which would provide an enhancement to the surroundings, with very limited impact upon trees. The proposals are supportable in arboricultural terms provided the following method statement is adhered to.

3.0 ARBORICULTURAL METHOD STATEMENT

Protection and Retention of Existing Trees and Habitats

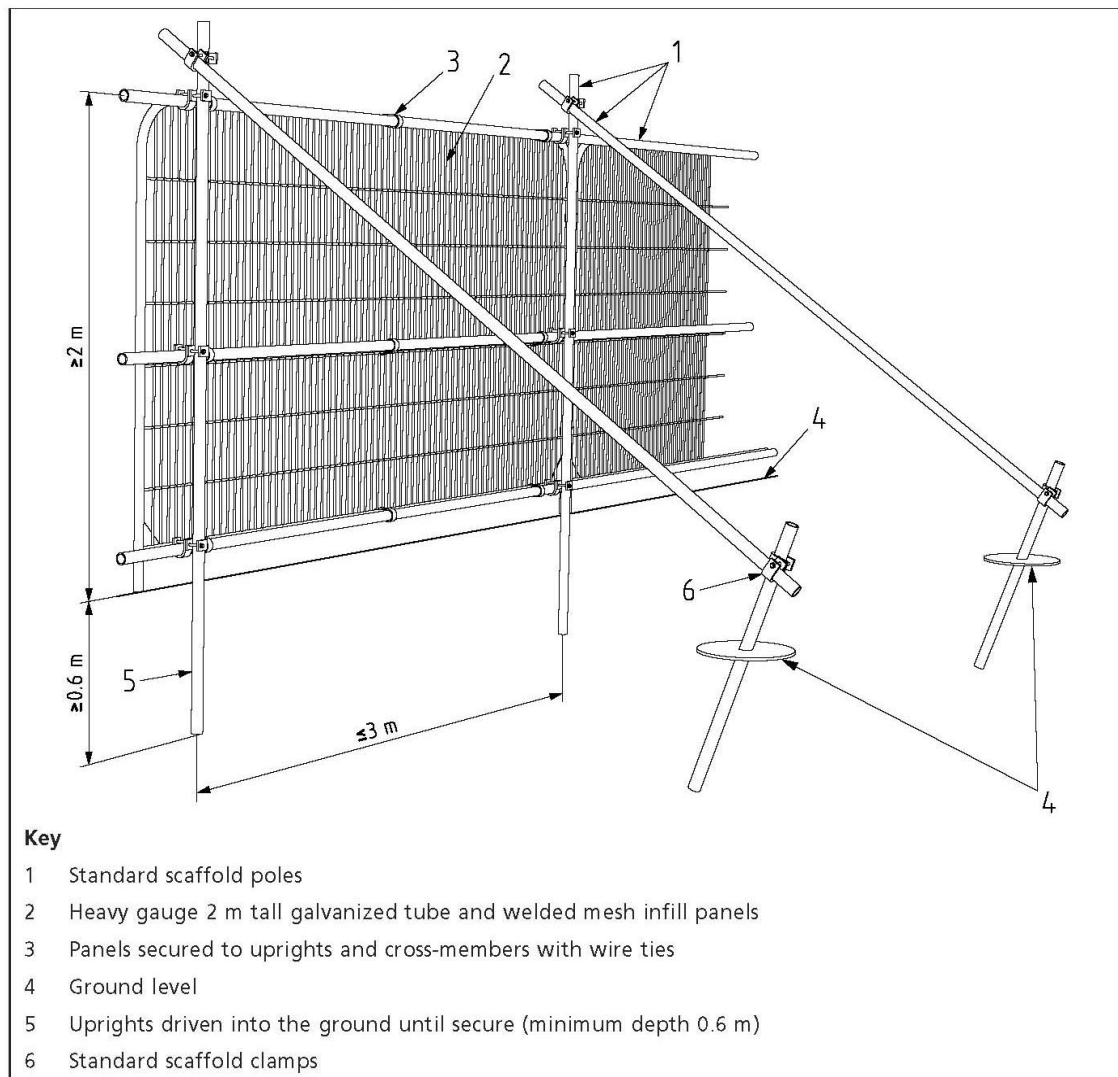
- 3.1 The Contractor shall exercise due care when performing operations beneath the canopy of existing mature trees and vegetation designated for protection and avoid at all times damage to the roots, trunk and branches.
- 3.2 The Contractor shall train all members of the construction workforce operating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

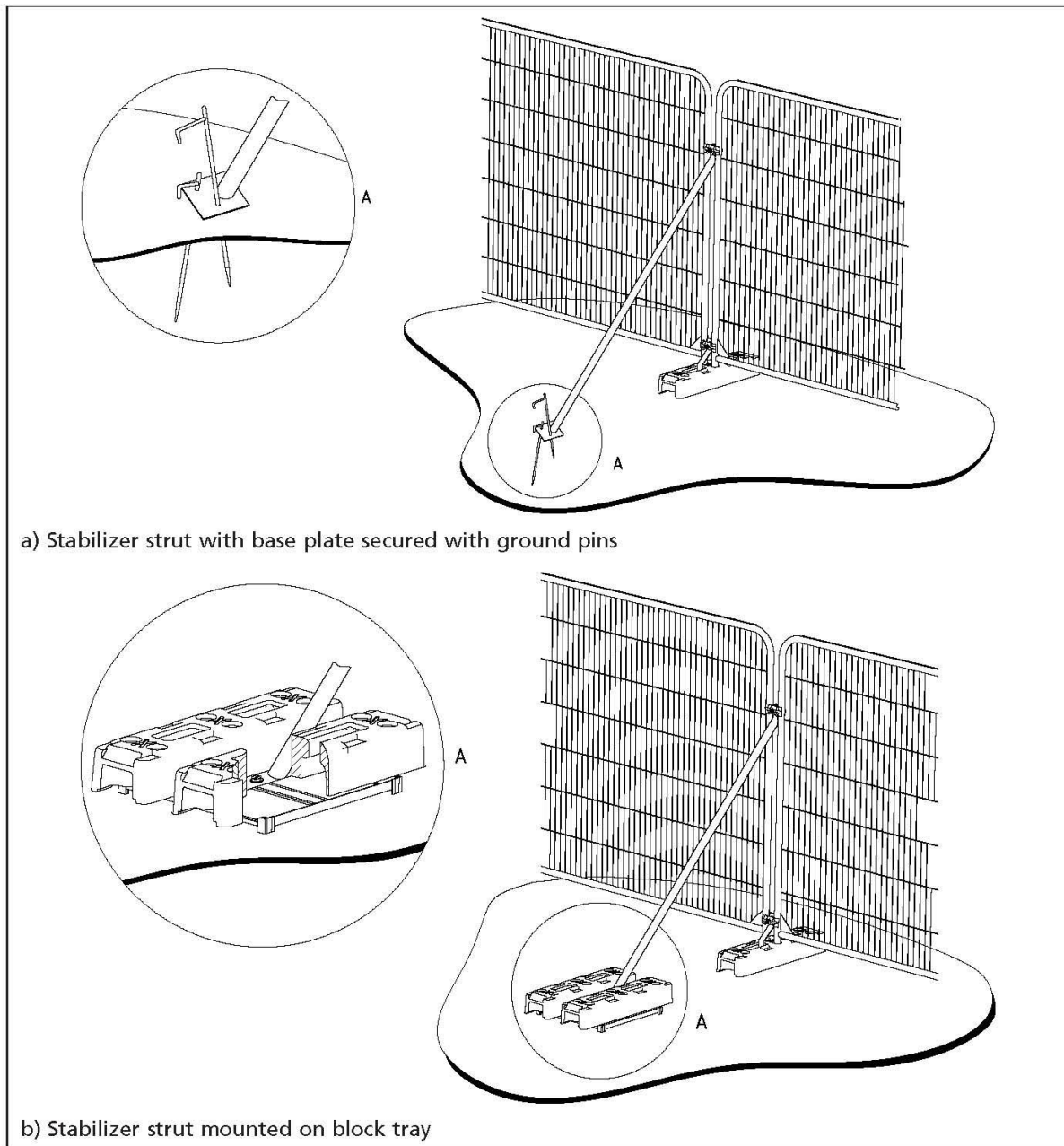
- 3.5 The installed protective barrier shall be 2.0 metres minimum height 'Heras' Welded Wire Mesh Fencing secured to a scaffolding framework, set into the existing ground, and positioned to the outside edge of the existing Tree Root Protection Area. Where existing ground conditions do not allow for 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 *LLD2098-ARB-DWG-002 – Tree Retention and Protection Plan*.

Figure 2 Default specification for protective barrier



© The British Standards Institution 2012

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 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. Hard surfaces shall be broken up mechanically, but subsoil and rubble shall be carted out of the RPA manually with no digging or scraping by machinery permitted.

- 3.15 Any roots found shall be wrapped in hessian and covered with traffic bollards and barrier tape to highlight their location. 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 (if necessary) 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.

Services in Proximity to Existing Trees

- 3.16 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.
- 3.17 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'*.
- 3.18 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.
- 3.19 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

- 3.20 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.
- 3.21 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.

- 3.22 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

- 3.23 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’*. The tree surgery works shall be agreed between arboriculturalist, tree surgeon and (if necessary) LPA tree officer. 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

- 3.24 All existing trees to be designated for removal are to be removed in accordance with the *LLD2098-ARB-DWG-001 – Tree Retention and Protection Plan*. All tree work and removal shall be carried out in accordance with *BS 5837:2012*.
- 3.25 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.
- 3.26 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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