

KINGSBRIDGE ESTATES LTD

BUTTERICKS, HAVANT

LLD1619-ARB-REP-001

Arboricultural Impact Assessment and Method Statement

Prepared by	GS
Checked by	JJ
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Project Reference	LLD1619
Revision	02

Planning Issue

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1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake a tree survey and produce arboricultural documentation for the proposed development of land Buttericks, Havant, Hampshire.
- 1.2 The Arboricultural Impact Assessment and Method Statement report provides evaluation of the direct and indirect effects of the proposed design and where necessary recommends mitigation.
- 1.3 The Arboricultural Impact Assessment and Method Statement report for the development of land at Buttericks, Havant has been prepared by George Sayer (*BSc(Hons) PgDip TechArborA*); Project Arboriculturalist and reviewed by Joe Jackson (*Landscape Architect BA (Hons) LA DipLA CMLI*); Principal at Lizard Landscape Design and Ecology, Worthing
- 1.4 This written Arboricultural Impact Assessment and Method Statement should be read in conjunction with the associated tree survey documentation, including *LLD1619-ARB-DWG-001 – Tree Constraints Plan*; *LLD1619-ARB-SCH-001 – Existing Tree Schedule*; and *LLD1619-ARB-DWG-002 – Tree Retention and Protection Plan*.

2.0 EXISTING SITE INFORMATION

The Site

- 2.1 The site consists of a commercial / industrial building owned by Buttericks. The building covers approximately 5,300.0 m² of the 1.0 Ha site. The site is dominated by the building and hard surface parking areas, with grass verges to the east and west and scattered trees along the boundaries. The site is bounded by Stanbridge Road, New Lane, and Downley Road to the south, west and east, with a redundant gas holder and vets' practice to the north.

Existing Site Vegetation

2.2 The bulk of the vegetation consists of small ornamental trees, screening hedges and shrubs and several self-seeded trees along the building edge. Several large Lombardy poplar are present just outside of the site to the northern boundary. These trees are large but offer little value to the area and are generally out-of-keeping with the other local vegetation and the commercial / industrial setting. The vegetation is almost exclusively of low value, offering some limited screening but little good quality visual amenity.

2.3 No trees within the site are covered by *Tree Preservation Order. Havant Borough Council TPO 888 (G1)* covers a line of trees outside of the site to the north.

3.0 DEVELOPMENT PROPOSAL

3.1 The scheme proposals are for the demolition of the existing building and the construction of 12no. new commercial units, with associated access and parking. The access will continue to be from Stanbridge Road to the south-west however the access would be re-configured to provide a single entry-exit point. The proposals shall incorporate significant areas of ornamental and native planting including native trees and hedges.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

Effects of Development Proposals on Existing Vegetation

4.1 A small number of trees are considered unviable for retention due to their current condition. Due to the nature of the site; the proposals and the condition of the existing vegetation, it has been proposed to remove the majority of the existing low-value vegetation on the site and replace it with better specimens of similar species. The proposals have been designed to make efficient use of the space created by the removal of low-value trees.

- 4.2 The proposals require the removal of a number of low-value trees present along the site boundaries. Some of these are ornamental whilst others are self-seeded. The vegetation is not well-maintained or of high amenity value. It is proposed to replace the vegetation lost on a minimum 1 for 1 replanting ratio, with better-quality specimens of similar species offering visual amenity and ecological value. The new buildings are proposed to be much more architecturally and visually appealing than the existing building, and therefore there is not a requirement for screening the building. Some new screening will be provided along the northern boundary, to provide a strong boundary to the adjacent site as well as offering some ecological value.
- 4.3 The proposed buildings encroach into the RPAs of several moderate value trees outside of the site. The trees are Lombardy poplars which are considered of moderate value due to their size and prominence, rather than any amenity value or significance. The trees were likely planted to screen the gas holder on the adjacent site; the species and scale of the trees are however out of character with the other local vegetation and the commercial / industrial setting of the site.
- 4.4 The areas of RPA encroached upon are already laid to hard surfaces and the building footprints as illustrated in the *LLD1619-ARB-DWG-001 - Tree Constraints Plan* and within *Appendix A – Site Photographs*. These surfaces are largely impermeable to water and air and were likely in place when the trees were planted. The existing footprint of the building already has a significant foundation which is likely to have prevented roots from reaching the soil beneath and would have cut any roots already present. It is considered unlikely that significant tree roots would be present beneath the hard surfaces, and highly unlikely that roots would be present beneath the building footprint due to the inimical nature of the ground here and the likely deep existing foundations. There is more favourable open grassland within which the trees have likely rooted surrounding the gas holder to the immediate north. The tree is outside the ownership of the site and therefore must be retained despite being oversized for the setting and potentially of limited longevity.
- 4.5 Where foundations and hard surfaces require removal within tree RPAs, this shall be carried out with due care under supervision by the arboriculturalist, to ensure an appropriate course of action is taken in the unlikely event that significant tree roots be found. The new foundations are unlikely to be standard strip footings due to the nature of the soil at the site; this would enable roots to be taken account of if necessary.

4.6 The proposed building is over 2.5 m further away from the tree than the existing building; it is proposed to have a porous paving surface for access and maintenance located between the proposed building and existing trees. This would provide a significant area of ground, porous to air and water where previously there were hard surfaces and buildings in close proximity to the tree stems. This would be an improvement to the rooting environment and a benefit to the existing trees.

4.7 The development proposals would involve the following site operations that could impact upon the existing trees:

- ***Contractor movements; site access and operations; storage and compound;***
- ***Removal of Existing Vegetation not for Retention;***
- ***Construction of New Buildings; Construction of Hard Surfaces;***
- ***Ground Work / General Site Operations;***
- ***Implementation of Soft Landscape Planting and Fencing;***
- ***Removal of protective measures.***

Tree Retention, Protection and Removal

4.8 In total, 6 no. trees are recommended for removal due to poor condition, regardless of the proposals. 24 no. trees, 3 no. sections of shrubs and 1 no. small section of hedge would require removal to accommodate the proposals. The proposals have been designed to utilise the space released by the removal of these trees, whilst also replacing them with better-quality trees of similar species. All off-site trees would be retained and protected through tree protective barriers.

4.9 All trees; hedges; and shrubs proposed for retention shall be protected through the installation of Tree Protection Barriers. Where possible these shall protect the entire RPAs of trees. Where this is not possible for access reasons, the areas of soft ground within RPAs shall be protected within operation zones with appropriate ground protection measures.

- 4.10 The demolition of hard surfaces within tree RPAs shall be executed with due care and away from the trees in a “top-down, pull-back” fashion to minimise risk of harm to trees. This shall be carried out under the supervision of the arboriculturalist to ensure appropriate action is taken should significant tree roots be present. Appropriate actions would include the clean severing of smaller roots, and the retention of larger roots with bridges in foundations and barriers to prevent burns from chemicals. Sections of existing foundation shall be left in situ and buried where its removal is not necessary, to avoid damaging roots growing in the vicinity.

Impact of Loss of Existing Trees

- 4.11 The vegetation to be removed is of low value and currently only provides value by screening the buildings. The new buildings would be of higher quality than the existing and therefore this screening is of limited significance. The proposals would replace the trees lost with better-quality specimens on at least a 1-for 1 ratio, with lower groundcover shrubs and boundary vegetation including significant lengths of native mixed-species hedging. The impact upon visual amenity and ecology is considered to be ‘negligible’ with potential for a long-term benefit. No trees covered by TPO are proposed to be removed.

Tree Loss Mitigation Measures

- 4.12 The tree protection measures proposed would mitigate the impact upon tree roots of moderate-value trees outside of the site. The trees lost would be replaced on at least a 1-for-1 basis, with better specimens both species already present (*such as cherries and hawthorn*); new species of ecological value (*such as whitebeam and wayfaring tree*); lower groundcover shrubs and significant lengths of native mixed-species hedging. The new vegetation would be planted according to a coordinated planting scheme to enhance the visual amenity and ecological value of the site. These measures are considered to mitigate more than adequately for the loss of vegetation and would result in a net gain in arboricultural; amenity; and ecological terms over the medium-long term.

5.0 ARBORICULTURAL METHOD STATEMENT

Protection and Retention of Existing Habitats – Scattered Trees

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

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

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

5.2 The Contractor Site Compound shall be located outside of any prescribed tree Root Protection Area and shall be permitted for the storage and securement of materials only within a temporary compound. The compound shall be fenced (*2.0m minimum height Heras Weld Mesh Fencing*) and shall allow designated contractor access without obstruction for construction vehicles entering the site.

5.3 The compound area shall be located so as to not incur damage or injury to the root systems or canopy of any existing trees or vegetation within or adjacent to the site, in accordance with *BS 5837:2012 – 'Trees in Relation to Design, Demolition and Construction – Recommendations'*. All site operations associated with the usage of the compound area shall be undertaken with due care and attention so as to negate damage of the surrounding environment.

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

Removal of Existing Vegetation

- 5.5 All existing trees to be designated for removal are to be removed in accordance with the *LLD1619-ARB-DWG-002 – Tree Retention and Protection Plan*. All tree work and removal shall be carried out in accordance with *BS3998:2010* and *BS 5837:2012*. Trees designated for removal and felling shall be clearly marked on site with white paint. Prior to the removal and felling of trees, the required work and tree positions shall be agreed on site with the Landscape Architect / Arboricultural Consultant. Trees shall be felled prior to the erection of the Tree Protective Fencing. Care should be taken during the tree removal process to avoid any damage to any trees which are designated to be retained.
- 5.6 Stumps shall be removed and cut away so that the top of the stump shall be at least 450 mm below the final topsoil level in order that the site can be reinstated in accordance with the existing site levels. Stumps are to be treated with an approved herbicide to be agreed with the Landscape Architect. Where the depth is greater than 450 mm the areas shall be backfilled with topsoil to the required level.
- 5.7 The removal of shrub or scrub material within the Root Protection Area of any tree to be retained shall employ a Manual Removal method; the use of hand tools shall be used in order to maintain the ground surface of the Root Protection Area and reduce any damage to existing tree roots within the protected root zone. Adjacent trees shall not be utilised as anchors or levers to facilitate the removal of adjacent vegetation.
- 5.8 Vegetation clearance to site boundaries should take place outside the bird nesting season (*nesting season: March-September inclusive*) or alternatively under a watching brief from a suitability qualified ecologist.

Tree Surgery

- 5.9 Tree removal works are proposed and detailed within the *LLD1619-ARB-SCH-001 – Existing Tree Schedule*. Any significant defects found in the trees during the course of the scheduled work shall be reported to the Landscape Architect / Arboricultural Consultant. All scheduled and arising tree work shall be undertaken by an approved and qualified tree surgeon in accordance with *BS 3998: 2010 'Tree Work: Recommendations'*. Care should be taken to avoid damage to neighbouring trees to be retained. Branches in confined spaces shall be removed and taken down in sections. All arisings shall be transported and disposed of away from site to the Contractor's tip

Tree and Vegetation Management

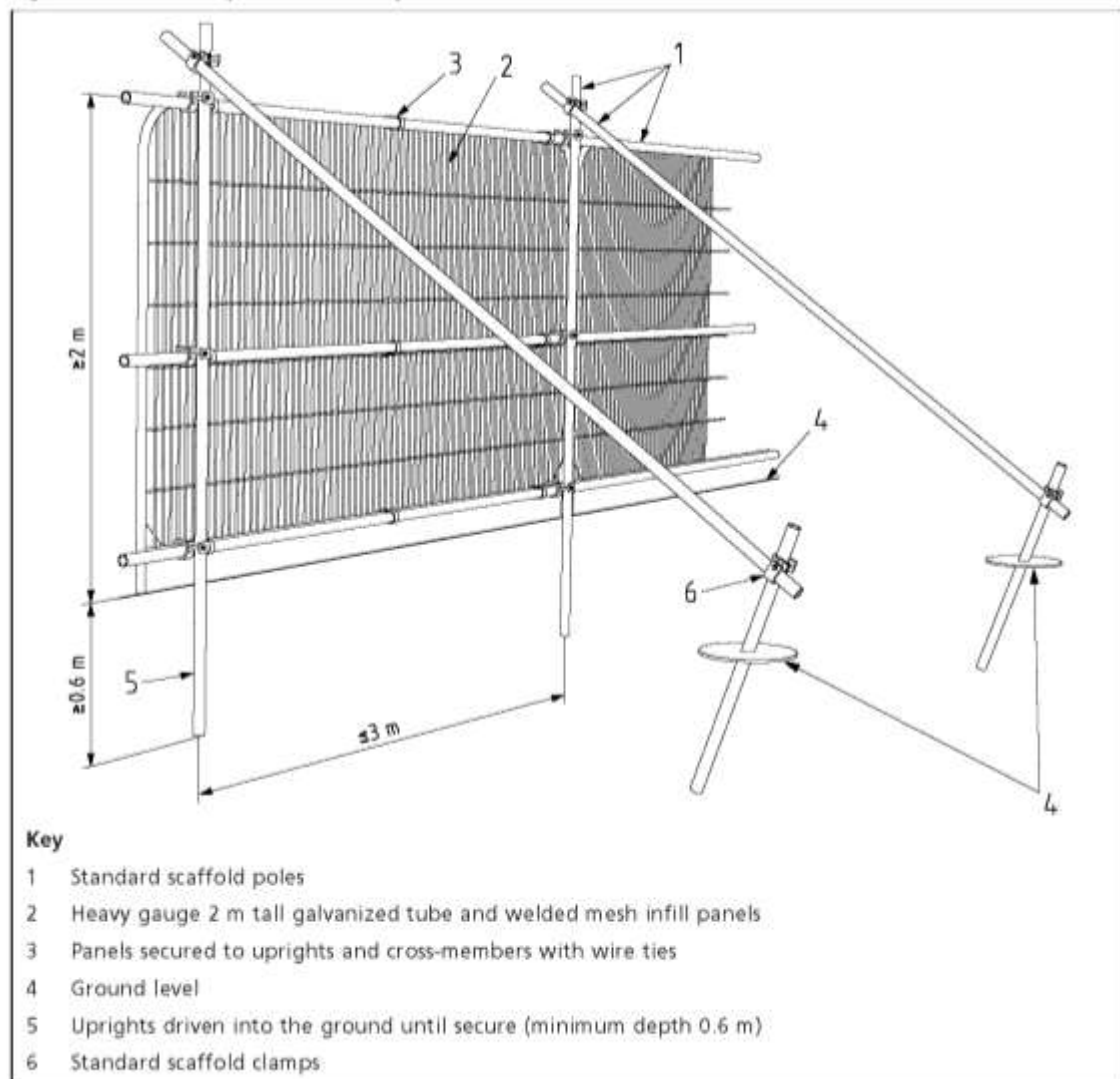
- 5.10 For Tree and Vegetation Retention and Removal Proposals refer to the accompanying *LLD1619-ARB-SCH-001 - Existing Tree Schedule* and *LLD1619-ARB-DWG-002 – Tree Retention and Protection Plan*.

Protection and Retention of Existing Vegetation

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

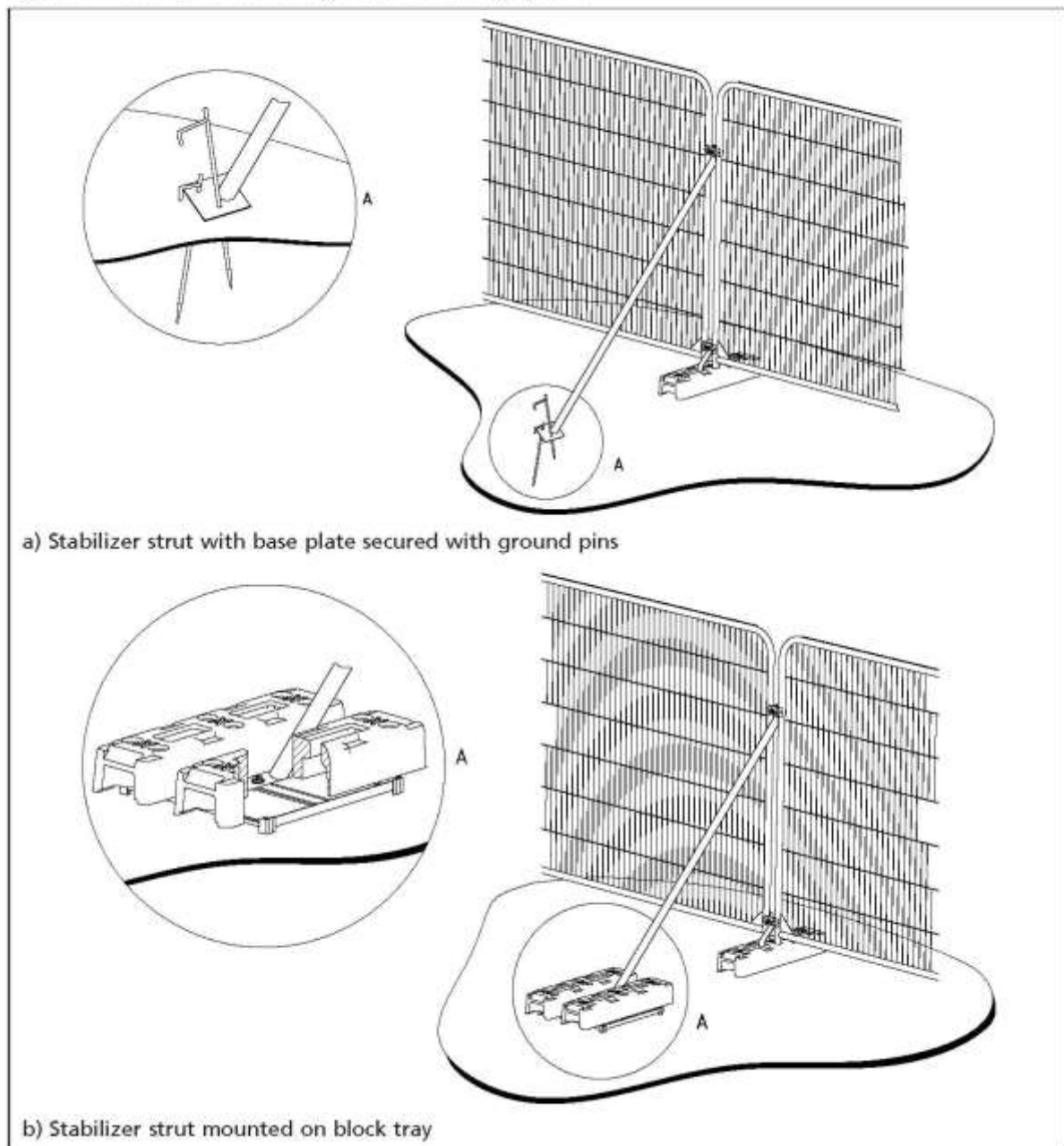
- 5.14 The installed protective barriers shall be 2.0 metres minimum height 'Heras' Welded Wire Mesh Fencing secured to a scaffolding framework, set into the existing ground, and positioned to the outside edge of the existing Tree Root Protection Area. Where existing ground conditions do not allow for the above method, the Welded Wire Mesh Fencing Panels may be mounted on concrete or rubber feet, supported on the inner side with stabilizer struts fixed on a block tray or secured with ground pins; and positioned as specified. The fencing should be strained, and fixed to fences, walls, knee rails where possible to provide a complete protected area (*refer to Figure 2 and Figure 3 below; © British Standards Institute 2012*). All tree protection to be in accordance with *BS 5837; 2012; 'Trees in Relation to Design, Demolition and Construction - Recommendations'* set out as specified within drawing *LLD1612-ARB-DWG-002 – Tree Retention and Protection Plan*.

Figure 2 Default specification for protective barrier



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Figure 3 Examples of above-ground stabilizing systems



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

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

- *Installation / checking of tree protection measures;*
- *Method statement briefing for site staff;*
- *Checking of ground protection measures prior to first use;*
- *Supervision of manual excavation;*
- *Specification and Installation of 'No-Dig' Construction;*
- *Removal of tree protection measures.*

Ground Protection Measures – Operation Zone During Construction

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

- *For pedestrian access only, protection should consist of a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (100 mm depth of woodchip), laid onto a geotextile membrane;*
- *For pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (150 mm depth of woodchip), laid onto a geotextile membrane should be used;*
- *For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

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

Tree Protection Measures – Demolition within RPAs

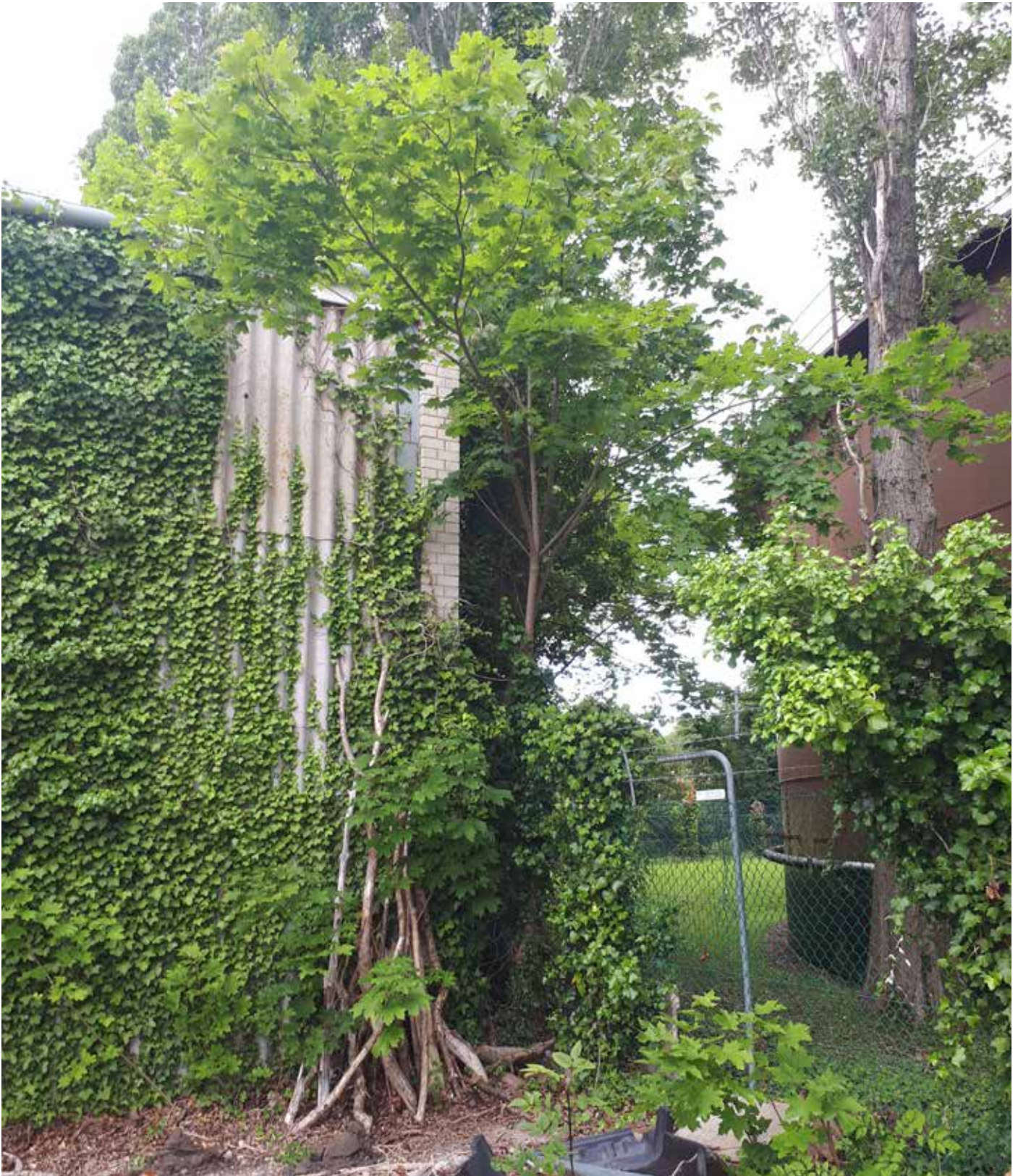
- 5.23 Where demolition of structures, removal of hard surfaces and excavation of new and existing foundations are required within tree RPAs, this shall be carried out with due care under the supervision of the arboriculturalist to ensure appropriate action is taken should significant tree roots be present. Smaller roots could be cleanly severed with sharp hand tools, whilst larger roots shall be retained, protected and incorporated back into the ground with bridges in foundations and barriers to prevent burns from chemicals installed as appropriate.
- 5.24 Works within these areas may be undertaken using machinery; however, all machinery must be operated at a slow pace when within RPAs and in shallow layers, such that roots can be identified before they are damaged or removed. Demolition shall be carried out away from the trees in a “top-down, pull-back” fashion to minimise risk of harm to trees. All machinery shall operate from existing or new hard surfaces, or from an area protected with appropriate measures such as an interlocking ground-protection plate system.



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APPENDIX A – SITE PHOTOGRAPHS

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Photograph No. 1 - The trees growing along the north-east boundary with the gas holder, immediately adjacent to the existing building.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 2 - The large poplar tree on the north-eastern corner with the existing building adjacent.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 3 - The trees growing along the north-east boundary with the gas holder, immediately adjacent to the existing building.

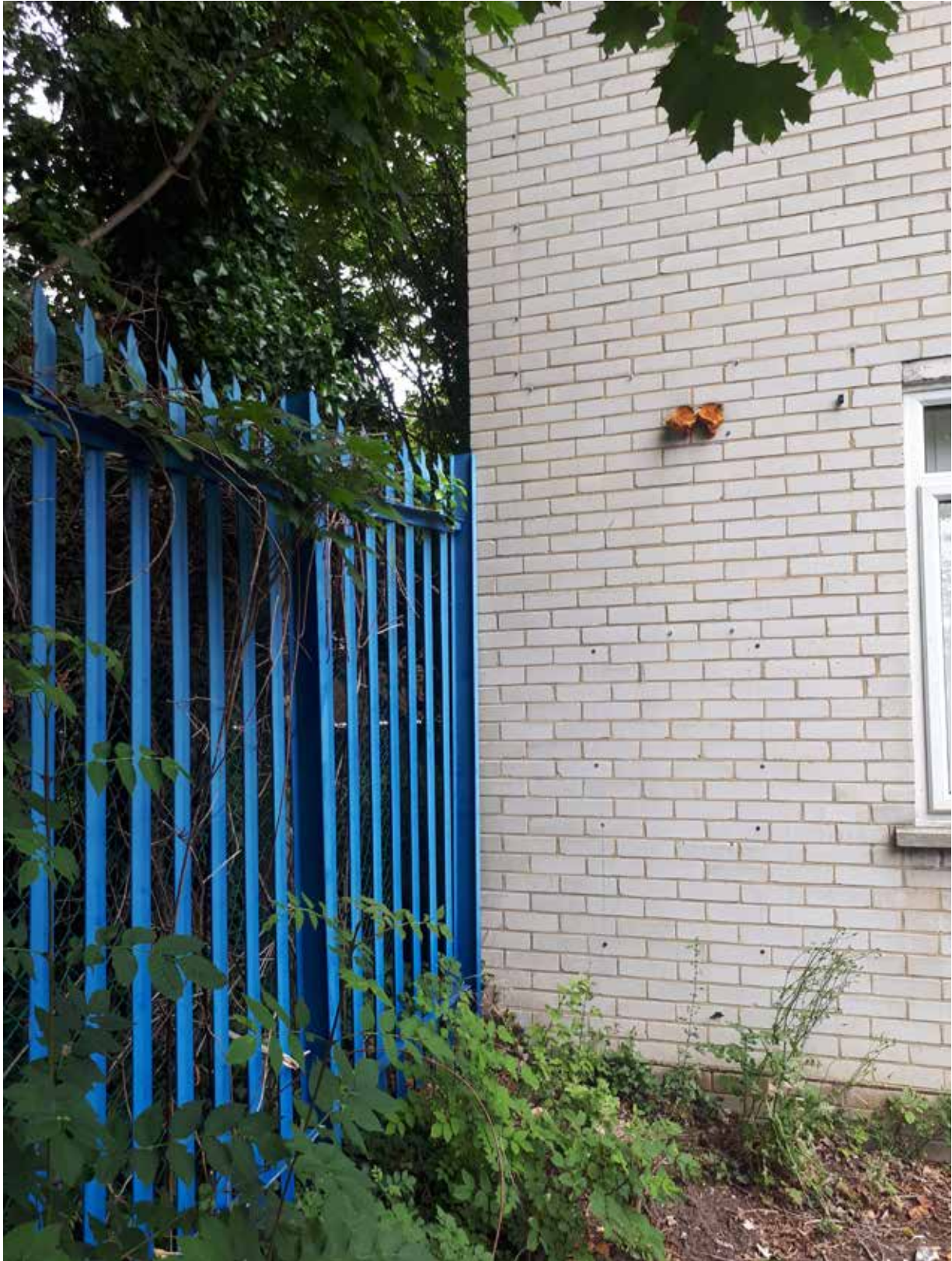
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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 4 - The existing building is located against the boundary fence, with the boundary vegetation growing over the fence.

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