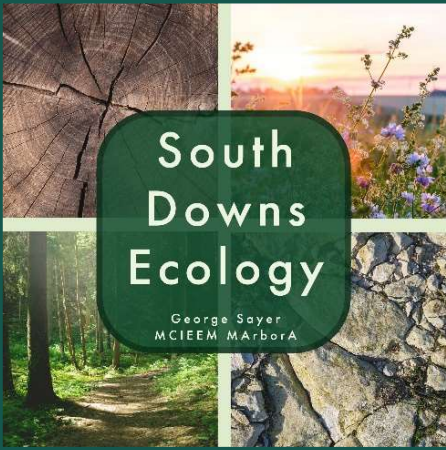


Arboricultural Impact
Assessment and
Method Statement

New Dwellings at
Fairhaven, Pagham



South
Downs
Ecology

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1.0 Introduction

- 1.1 A tree survey and tree protection package have been commissioned for the proposals for new dwellings at Fairhaven, Nyetimber lane, Pagham.
- 1.2 A detailed tree survey was carried out on 17th October 2024 by George Sayer (*BScHons PgDip MArborA; LANTRA Professional Tree Inspection 2019*); from which a schedule and constraints plan of existing trees on and surrounding the site was produced in accordance with *BS 5837:2012 – 'Trees in Relation to Design, Demolition and Construction – Recommendations'*. From this information an arboricultural impact assessment was undertaken, and a plan of tree protection devised to ensure the long-term retention of the trees on-site.

Proposals

- 1.3 The proposals are for the renovation to the existing dwelling Fairhaven, and the construction of 3no. further dwellings on the north of the site.

Site Description

- 1.4 The site consists of an existing bungalow, Fairhaven, with its extensive gardens. The site is rectangular and accessed off Nyetimber Lane in Pagham. Residential properties surround the site to all aspects other than to the south, where the Pagham Football Club and grounds lie south of Nyetimber Lane.

Surrounding Landscape

- 1.5 The site lies well within the built-up area of Pagham. The wider surroundings are largely arable, with habitats of the Pagham Harbour further to the west.

Existing Site Vegetation

- 1.6 The site contains a small number of trees, mostly small fruit trees, all of low value. A large, low value sycamore is present off-site to the east with a large, moderate value beech off-site to the west. The site is surrounded by ornamental garden hedges, with the roadside hedge containing several native trees.

2.0 Arboricultural Impact Assessment

Removal of Trees

- 2.1 Of the existing trees, 12no. low value and 2no. unviable trees would be removed. This would have a limited effect on Arboricultural, landscape or ecological amenity with most being small ornamental specimens. There would be no significant loss of vegetative connectivity with the surroundings being residential.

Disturbance to Roots and Rooting Environment

- 2.2 The proposed new dwellings have been designed such that they would not encroach into any RPAs. The existing access would be extended to provide more parking to the south, and to create access to the new dwellings, which would likely require these areas being cleared, levelled and surfaced. In the absence of mitigation, excavation to achieve levels within the RPAs might result in harm to the trees through cutting and crushing of roots and loss of rooting area, should specialist measures not be used. To avoid these impacts, the access drive areas within RPAs shall be constructed using a 'no-dig' technique, with the surface constructed using a geocellular confinement system to spread the load of vehicles. Horizontal venting of the surface should be considered if possible to allow better airflow. For solely private parking, a more limited construction such as reinforced gravel grids laid onto geotextile might be suitable, subject to an engineer's design. There are no trees on the access point to the highway, meaning that tying in of levels would be possible.

Construction in Proximity to Trees and Hedges

- 2.3 Access over RPAs would be required east of the proposed access to the north. In the absence of mitigation, such access might cause soil compaction and crushing of roots, leading to the decline of a moderate value tree. Appropriate ground protection measures should be utilized in these small areas to allow temporary access over RPAs.
- 2.4 The construction works would bring the built form closer to existing trees in the north of the site, but as the trees are already in gardens within a broader residential setting, the increase in pressure on trees would be negligible.
- 2.5 To protect trees from vehicular collision and damage to RPAs outside of the operation zones, Tree Protection Barriers will be installed surrounding the existing hard surfaces in proximity to trees. The barriers will be fixed into the ground and strained to ensure they are stable.
- 2.6 A designated compound area shall be designated. The area shall lie entirely outside of RPAs or on existing surfaces, and are proposed to be used for storage, welfare, parking of machinery and other uses.

Further Protection Measures

- 2.7 Assuming that new surface water drainage is required, such as soakaways or French drains, these should be designed to avoid all RPAs. There is ample room in the site for such drainage.
- 2.8 New services would be required; these are intended to come along the existing access. The route of new services should be designed to run as far as possible from trees. Should any services have to be installed or amended within RPAs, the routing of services will have to be installed using a manual excavation methodology, under arboricultural supervision.

Replacement Planting

- 2.9 New native tree planting should be incorporated into the design. Species should be natives such as field maple, wild cherry, hawthorn, crab apple, hornbeam, and rowan. This should ultimately result in an ecological and Arboricultural gain. A Biodiversity Net Gain assessment also accompanies the application detailing how a broader ecological gain would be achieved. This includes compensation for trees proposed for removal.

Summary of Impacts

- 2.10 Overall, the proposals require removal of a small number of trees, of low value. The proposals present a low risk of harm to several low and moderate value trees; this risk can be avoided through basic protection measures. The proposals are therefore supportable.

3.0 Arboricultural Method Statement

Site Movements, Storage and Compound

- 3.1 No vehicular or pedestrian movements shall be permitted during construction over unmade ground within RPAs. The site storage, waste and compound areas must be located either within existing hard surfaces or outside of tree RPAs. Fuel and chemicals shall be stored in appropriate containers to prevent spillage into unmade ground. All site movements, storage and compound shall seek to protect trees during construction in accordance with BS 5837:2012 – *Trees in Relation to Design, Demolition and Construction – Recommendations*.

Tree Protective Fencing

- 3.2 The RPAs of trees to be retained shall be protected through the installation of tree protective fencing to the outside of the root protection area. 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 figures 2 and 3 below.
- 3.3 In locations where no construction is being undertaken, but there is a risk of inappropriate storage or vehicle parking, exclusion zones shall be created through the use of barrier tape, traffic bollards or low level traffic barriers. Such measures shall be pinned down to prevent easy removal.
- 3.4 Signs shall be affixed to the barriers stating '*Tree Protection Zone – No Access*' in addition to day-glo tapes to the top of the fencing, in accordance with BS 5837:2012 – '*Trees in Relation to Design, Demolition and Construction – Recommendations*'. Within the protected area, no construction activities shall be permitted, to include:
- *Lighting of fires*
 - *Storage of chemicals or building materials*
 - *Dumping of spoil or rubbish*
 - *Driving of vehicles*
 - *Alteration of soil levels.*

Figure 2 Default specification for protective barrier

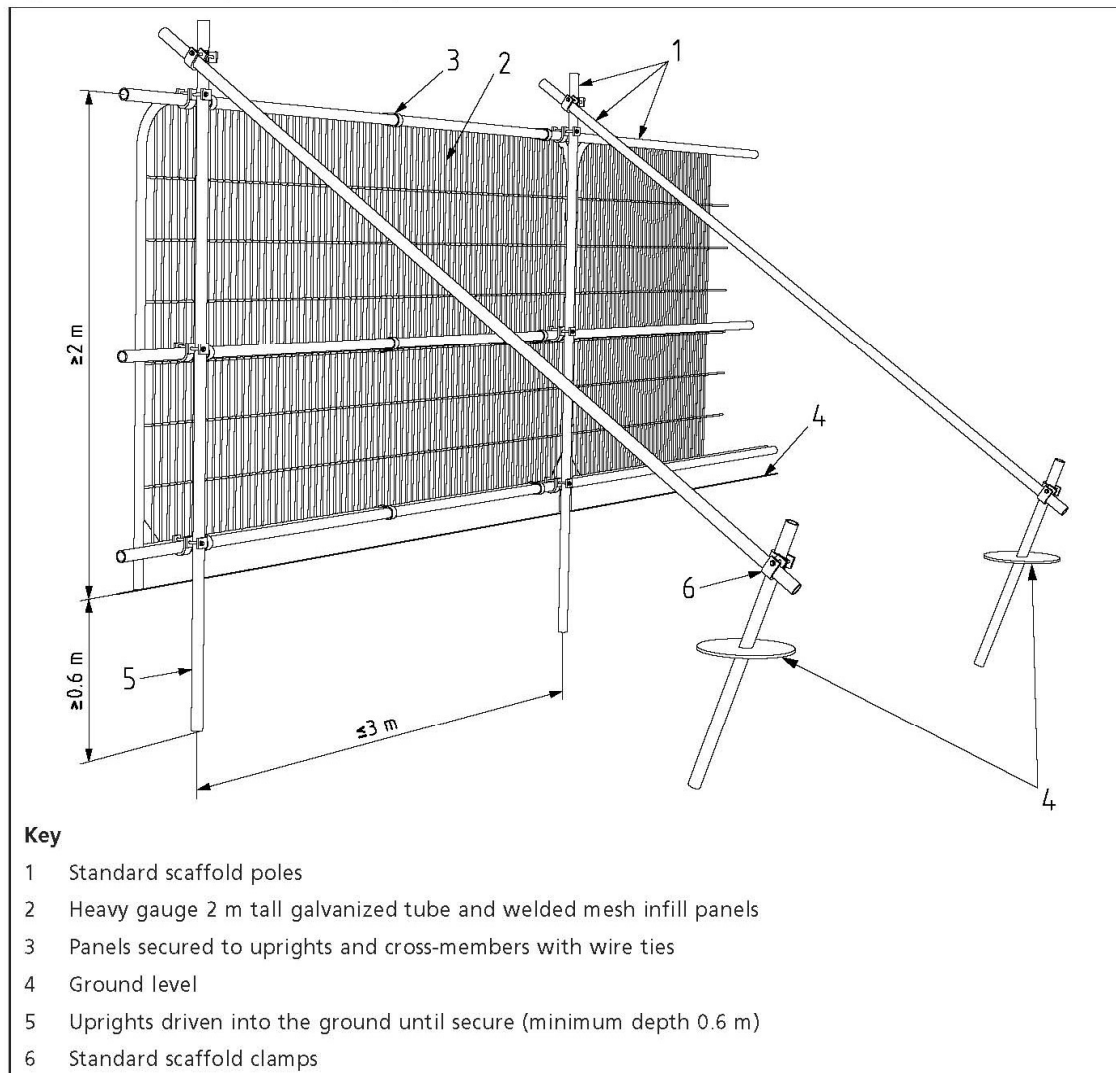
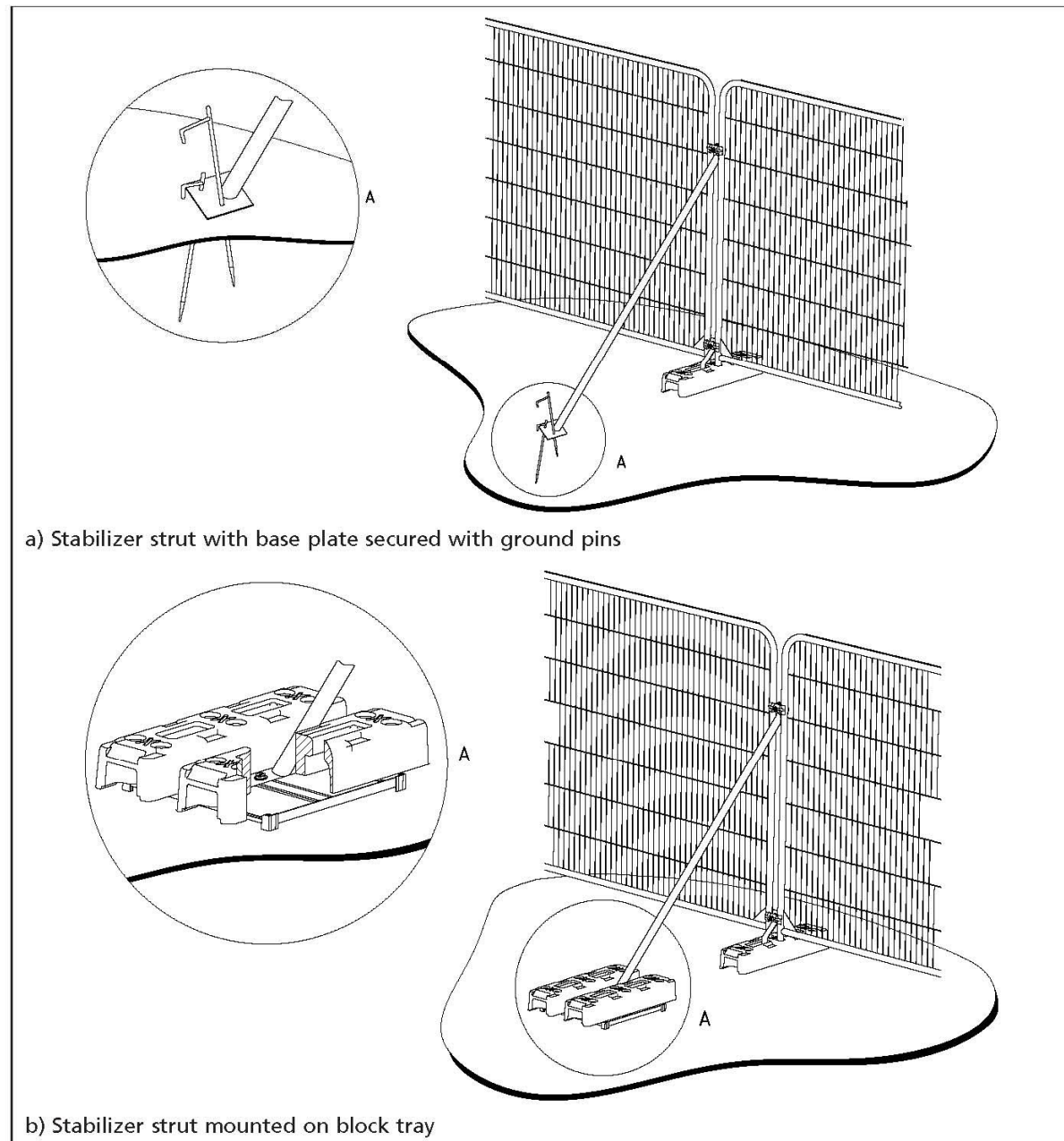


Figure 3 Examples of above-ground stabilizing systems



- 3.5 Tree protective barriers shall be installed and maintained throughout the construction phase by the main contractor, who shall be responsible for ensuring the fencing remains in place and is properly maintained. The fencing shall be installed in accordance with the *Tree Retention and Protection Plan*. Adjustment or relocation of the fencing during the construction phase shall be undertaken only following prior agreement by the arboriculturalist.
- 3.6 Wherever possible, tree protective fencing shall surround the entirety of the tree RPA. Where this is not possible, ground protection measures shall be utilised within designated operation zones to prevent damage to roots or compaction of soil. The locations of tree protective fencing and ground protection measures are detailed within the *Tree Retention and Protection Plan*.

Ground Protection Within RPAs

- 3.7 Where vehicular access is required over the soft ground of an RPA, ground protection measures shall be installed to ensure no compaction occurs. The appropriate construction shall be determined by the engineer, supplier or contractor and approved by the arboriculturalist. 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.*
- 3.8 The surface material shall 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.*

New Surfacing within RPAs

- 3.9 Where new surfacing is required within RPAs, the turf layer shall be scraped back to soil, and then a geotextile laid to form the base of the access drive. A cellular confinement layer shall be installed filled with open-graded no-fines aggregate, above which appropriate and permeable bedding and wearing layers shall be installed, subject to an engineer's specification to be approved by the arboriculturalist. Side-venting of the construction shall be considered where feasible to maximise airflow to the soil below.
- 3.10 Where only light use, such as parking for individual houses is required, a lesser construction might be deemed possible, such as a gravel retention grid system. In any case such methods shall be designed by an engineer so as to prevent soil compaction, and shall not require the removal of anything other than surface turf and loose soil layers.
- 3.11 In places some minor excavation will be necessary to allow tying in of levels of surfaces and construction of footings; such excavation shall be undertaken manually under arboricultural supervision to minimise damage to roots. Any significant roots shall not be cut unless so directed by the arboriculturalist; any such roots shall be recorded, cut cleanly and the ends wrapped in dry hessian. Should roots likely to be significant to the vitality of any tree be found, these shall be wrapped, retained and incorporated into the surface wherever possible, with bridges formed over the root or footings adjusted to allow it to remain and grow further.
- 3.12 The arboriculturalist shall confirm the appropriate measures have been undertaken either through supervision or photographic evidence.

Vegetation Removal

- 3.13 All remaining tree surgery works (i.e. stump removal) shall be undertaken in accordance with BS3998:2010 – Tree Works: Recommendations. Stumps shall either be stumpground or carefully pulled up and away from trees, taking care to check for larger entangled tree roots and cutting the stump away from these. Log piles shall be created in the site from the arisings to create new habitat.

Installation of Services

- 3.14 Wherever possible, the proposals utilise existing service routes. Any new drainage shall be sited outside of the RPAs of any trees. The new drainage shall be sited so as to be as far as possible from any tree stems.
- 3.15 Where the proposed routing of other new services such as electrical wiring 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*'. 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. Services are to be sleeved to ensure protection of the services and surrounding roots.

Supervision and Record-Keeping

3.16 The following supervision and oversight shall be undertaken:

- The arboriculturalist shall confirm with the appointed tree surgeon which trees are to be removed, and confirm this has been completed as proposed; photos of the measures shall be taken;
- Tree protective barriers and ground protection shall be installed and checked by the arboriculturalist for accuracy and sturdiness; photos of the measures shall be taken;
- The installation of utilities shall be overseen by the arboriculturalist to ensure no harm to roots. Manually excavation shall be directly supervised, and any decisions to cut or reinter roots logged and photographed;
- The no-dig construction shall be either directly supervised or inspected at each phase to ensure it is installed as per the specification – the stages include geotextile base layer, geocellular confinement system and aggregate fill, geotextile top layer, bedding layer and wearing layer. Edge restraints and permeability shall be checked. Photos of each stage of installation shall be taken;

3.17 A final report shall be made of all works relating to trees; this shall be retained by the contractors, site owners and arboriculturalist and shall be made available to the LPA as required.