Arbor-Eco Consultancy

ARBORICULTURAL IMPACT ASSESSMENT

At

BEREWOOD PHASE 8,
BEREWOOD, WATERLOOVILLE,
HAMPSHIRE

For:

BLOOR HOMES SOUTHERN LTD

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This report is the responsibility of Arbor-Eco Consultancy.
It should be noted that whilst every effort is made to meet the client's brief,
no site investigation can ensure complete assessment
or prediction of the natural environment.

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Revision C

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EXECUTIVE SUMMARY

The development proposals for this project have been carefully considered by Bloor Homes Southern Ltd in consultation with Arbor-Eco Consultancy. There is an acute understanding of the importance of trees in the landscape and every effort has been made to retain all trees at this site.

1. It is understood that a Planning Application for Berewood Phase 8 will require the removal of two small sections of H1 to form two access entrances to the development site off the major trunk road, A3. The sections of hedgerow identified for removal are less dense in terms of vegetation and would not involve a significant number of plants to be removed.
2. Group numbers G1 and G2, which are growing internally to the site, will also be removed as they are directly within the footprint of the proposed development.
3. Where the new access is to be developed, there are a number of developing trees in close proximity and therefore the solution being recommended and installed shall be carried out under the supervision of the retained Arboricultural Consultant.
4. The protection of unmade ground, using tree protection barriers, will be installed prior to any construction activity taking place.

Arbor-Eco Consultancy supports this Planning Application and proposed development layout in its current form. It must be remembered that there is no guarantee that this proposed development will be granted through the use of this report alone.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

Bloor Homes Southern Ltd have commissioned Arbor-Eco Consultancy to compile an Arboricultural Impact Assessment following the undertaking of an Arboricultural Survey of trees situated on land at Berewood Phase 8, Waterlooville. The site is within the administrative boundary of Havant Borough Council and within the county of Hampshire.

This report details the impact that the proposed development will have upon the site's existing tree stock and sets out recommendations for the subsequent mitigation or avoidance of impact. The study has been completed in accordance with guidance contained within British Standard BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

A small amendment has been issued in April 2025 along with an adjustment of Tree Protection in March 2026 and this revision takes this into account.

1.2 SITE DESCRIPTION

The proposed development of land is located adjacent to a populated residential area of the town of Waterlooville and situated towards the western fringes of the settlement. The site is accessed off various vantage points within the local landscape and is directly adjacent to the A3, London Road, major trunk road. The site is currently a mown field. The trees and vegetation surveyed were growing to the periphery of the site.

The site is delineated from neighbouring land by a mix of natural and artificial structures. To the north, the site abuts an ongoing development project. The eastern and southern boundaries were demarcated by further properties off A3, London Road, major trunk road. The western boundary abutted further green open space accessed off Milk Lane, minor road.

The site is centred at National Ordnance Survey Grid Reference SU 6765 0883. The topography of the survey area is generally flat. Arbor-Eco Consultancy, Tree Constraints Plan, Drawing Number MB240801-01-01 in Section 5 indicates the location of the trees surveyed.

1.3 DEVELOPMENT PROPOSALS

It is understood that the site surveyed will be the subject of a planning application to include the construction of 185 new residential units. In addition, associated hard and soft landscaping of the site will also be undertaken.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the clients' architect in addition to information collected by Arbor-Eco Consultancy. The documents and drawings considered are detailed within Table 1.1.

Author	Document	Document Number	Date
Bloor Homes	Site Layout (sketch)	SOxxx-PD-001D	Feb 2024
Bloor Homes	Phase 8A Topo & Utility Survey	01WQ03A	Feb 2024
Robert West	Cut & Fill Quantities Drawing	4166-002-5060-P01	Sep 2024
Robert West	Proposed Levels (4 sheets)	4166-002-5001 to 5004	Sep 2024
Robert West	Site Layout with RPAs	4166-002 SK13	Apr 2025
Encompass Surveys	Topo update (Allotment boundary)	2500/S22	Mar 2026

Table 1.1: Documentation Provided

2. STATUTORY PROTECTION

2.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

Examination of Havant Borough Council (2024) interactive mapping system (https://maps.havant.gov.uk/havant.aspx) accessed on 15th November 2024, indicated that none of the trees surveyed are the subject of a Tree Preservation Order.

Further examination of Havant Borough Council (2024) interactive mapping system (https://maps.havant.gov.uk/havant.aspx) accessed on 15th November 2024, indicated that the site is not situated within a Conservation Area.

2.2 PROTECTED SPECIES

Trees - Bats: A bat survey must be performed on the relevant roost potential prior to any tree work being carried out. If bats are found to be present, a Natural England licence will be required prior to work being carried out. Bats and the places they use for shelter or protection (i.e., roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017, as amended. They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present. The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on public bodies to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. A number of bat species are listed on Section 41 (England) and Section 42 (Wales) of the NERC Act 2006.

Nesting Birds: The removal of relevant features must be undertaken outside of the bird nesting season (this generally extends between March and August but is weather dependent). If this is not possible the area concerned should be checked immediately prior to removal by a suitably qualified ecologist. A licence can be obtained from Natural England to permit this work to be conducted and must be applied for beforehand. Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

In exceptional cases the law allows certain exemptions to permit legal activities (such as a development with planning permission) and where avoiding harm isn't possible. You may also be able to get a licence from Natural England for certain activities if you need to remove wild birds because they're causing problems.

The ecologist should also follow the Biodiversity Code of Practice for planning and development (BS 42020:2013).

2.3 LAND DESIGNATIONS (NATURAL ENGLAND)

For land you own or occupy, Natural England can select all or part of it for protection. Natural England will do this when it believes the site has features of special interest, such as its:

- wildlife
- geology
- landform

Natural England will 'notify' (or designate) the land, for example, as a site of special scientific interest (SSSI).

The site is not situated within a designated Natural England site at the time of writing the report.

2.4 OCCUPIERS' LIABILITIES ACT 1957 AND 1984

An occupier of premises owes the same duty, the "common duty of care", to all his visitors whether by invite or otherwise. The common duty of care is a duty to take such care as in all the circumstances of the case is reasonable to see that the 'visitor' will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the occupier to be there or for purposes other than that which they have been invited (trespassers).

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 INTRODUCTION

All trees within and closely surrounding the site have been surveyed and each has been identified with a unique number. The location of the trees can be found on Arbor-Eco Consultancy, Drawing Number MB240801-01-01 in Section 5.

A schedule of the trees surveyed can be found within Appendix 1.

3.2 DEVELOPMENT DESIGN AND LONG-TERM IMPACTS

3.2.1 Potential Impact on the Amenity Value of Trees

Impacts

Tree Removal

The proposed development and soft landscaping scheme will require the removal of a part of hedgerow number H1 to permit its successful implementation. In addition, G1 & G2 will be removed.

Proposed Tree Works

To permit space for the proposed development and to provide working space for the hard and soft landscaping improvements it will be necessary to carry out tree work on this site prior to any other works being carried out. The proposed tree works are detailed in Table 3.1.

ID No	Species	BS5837 Cat	Tree work and reason required
H1	Mixed Species	B2	To remove two sections, each measuring less than 10.0 m long (as shown on TPP drawing number MB240801-01-02) to provide the space to construct the two individual footpath links to the A3.
G1	Goat Willow	C2	Remove to facilitate the development.
G2	Goat Willow	C2	Remove to facilitate the development.
T3	Pedunculate Oak	B1,2	To crown lift and branch tip prune to the north to permit the space for construction activity.
T5	Pedunculate Oak	B1,2	To crown lift to permit access for the installation of the footpath.
G3	Mixed Species	B2	Side prune to south as bramble encroaches into working space.

Table 3.1: Tree Works Required

Bloor Homes Southern Ltd are reminded that trees and vegetation that overhang the highway should be crown-lifted to at least 5.2 m above ground level to allow safe passage of high sided vehicles as well as being cut back sufficiently from the edge of the carriageway to allow clearance for wing mirrors. Trees and vegetation that overhang footways and footpaths should be crown-lifted to at least 2.5 m above ground level and cut back to ensure the footpath/way is at least 1.2 m in width. This is to allow safe passage for all footpath/way users including wheelchairs, mobility scooters, etc.

These heights have been selected as an acceptable standard and any vegetation below this may be deemed to be an obstruction. The local authority may enforce Section 154 of the Highways Act (1980) which allows a Local Authority to serve notice upon the owner of the trees/ vegetation informing them that they need to clear any obstructions safely.

Mitigation/Avoidance
The Site Plan Layout provided by Rob West (4166-002 SK13 dated Sep 2024) indicates that there will be a number of trees planted around the site.

New tree planting should be carried out in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

3.2.2 Proximity of Trees to Proposed Structure

Impacts

Branch Spread

It is evident that an existing tree management regime existed, in the form of pruning (as was noted at the time of the inspection) and it is noted that any future conflict that may arise from the proposed development can be appropriately managed through continued management works to the trees, hedgerows and shrubs canopy. So long as such works are completed in accordance with best practice guidance, they will not cause significant harm to the health or amenity value of the tree.

Shading

It is unlikely that the new extension will experience significant shading during the day as the sun tracks across the horizon. The orientation of the buildings and aspects of the windows would suggest that any shading of the western face of the building will be felt in the mid to late afternoon. Therefore, it can be assumed that no significant shading of primary living spaces within the proposed new building extension is likely to occur due to existing or proposed trees.

Leaf Litter, Fruits, Pollen, Sap etc.

Whilst the majority of the retained trees are species associated with significant fruit fall, leaf and branch drop or sap exudate problems the inconvenience experienced can be overcome by implementing good housekeeping.

Mitigation/Avoidance

Trees across this site will be the subject of cyclical pruning as the trees continue to grow. Further works will be required in the future to prevent conflict occurring. However, such works will not be significant as to impact the long-term visual quality of the trees and hedgerows.

With respect to leaf litter, it is noted that the sweeping up of leaves and cleaning of gutters, which may become blocked by falling leaves, is considered to be routine seasonal household maintenance and, as such, no notable conflict with the proposed development is considered to occur. Nonetheless it may prove appropriate in certain areas to use gutter guards, or otherwise enclosed gutters, to minimise the potential for leaf fall to cause blockage and an ongoing nuisance.

3.3 Potential Impacts from Construction Processes of the Proposed Development

3.3.1 Potential Root and Canopy Protection

To prevent harm occurring to retained trees during development it is recommended that demolition and construction works are excluded from the Root Protection Areas (RPA) of retained trees. Additionally, works should not be undertaken beneath the canopy spread of retained trees where this can be avoided.

The RPA represents the minimum area around trees that must be left undisturbed to ensure their survival. The roots typically occupy the top 600 mm of soil and the fine roots which absorb water, oxygen and nutrients are situated in the top 100 mm of soil. Any incursion into the rooting zone of a tree can cause a notable impact upon a tree's health.

Where existing buildings and areas of hard surfacing exists within the RPA of retained trees it is very likely that the rooting will have occurred asymmetrically due to the hard structures and the morphology of the roots is such that they are likely to have formed a fan shape with many roots running parallel to the man-made structures rather than being offset so far in to the site. The current RPA is shown in accordance with the guidance within BS5837:2012 which is effectively a presumed calculation of the extent of a trees' root system that is required to ensure the continued vigour of a tree.

Demolition and construction work carried out within the RPAs of the retained trees will cause the greatest damage. Soil that has been compacted will not provide suitable conditions for the survival and growth of vegetation, whether existing or new, and is a common cause of post-construction tree loss on development sites. Compacted soil will adversely affect drainage, gas exchange, nutrient uptake and organic content, and will seriously impede or restrict root growth. The risk of soil compaction is greatest in soils with a significant clay content and in wet conditions. It can result from temporary or short-term loadings, such as the passage of a single vehicle, or from longer-term construction activities, including materials storage.

In accordance with BS5837:2012, Section 4.6.2, an allowance for the modification can be made to the RPA of trees located adjacent to man-made or naturally occurring hard structures. In this case highways, access routes, footpaths (especially those that are kerbed) and underground services will affect the morphology of roots. The morphology of the roots is such that they are likely to have formed a fan shape with many roots running parallel to the hard structures rather than being offset in to the site. To determine the exact location of the roots of a tree it would be necessary to employ a root-radar for this work.

Section 7.4.2, Para 7.4.2.3 of BS5837:2012 permits the construction of new hard surfacing within the unmade ground of the RPA of a retained tree of no greater than 20%.

The RPA and canopy spread of each tree to be retained is shown on Arbor-Eco Consultancy, Drawing Number MB240801-01-02, Section 5. Additionally, details of the crown spread measurements are contained within Appendix 1 and a schedule of RPAs for trees on the site is located at Appendix 2.

<u>Impacts</u>
The proposed development of the site has been designed so that major works are justifiably required within the RPAs of a number of retained trees in the form of construction and replacement hard surfacing.

As stated within Section 7.4.2, Para 7.4.2.3 of BS5837:2012 permits the construction of new hard surfacing within the unmade ground of the RPA of a retained tree of no greater than 20 %. There is no encroachment into any RPA of the trees as shown on Arbor-Eco Consultancy, Drawing Number MB240801-01-02, Section 5, however, it is acknowledged that some of the development is at the very edge of a number of RPAs. T1 and T3 are deemed the most vulnerable. These trees are relatively young in age and it is likely that they will tolerate some root pruning if required.

The protection of trees during demolition work is discussed within Section 3.3.6.

The construction works to develop sections of hard surfacing, such as the foundations of Plot 86 has the greatest potential to cause harm to the retained tree T3. It is considered that the trees identified on Arbor-Eco Consultancy, Tree Protection Drawing MB240801-01-02, Section 5, will not be so significantly impacted upon with the adoption of tree protection measures and good working practices as described below.

Where there is a likelihood of conflict and in areas where construction is required within close proximity to the RPAs of retained trees 1 and 3, the adoption of good working practices and periods of supervision from the retained Arboricultural Consultant will reduce the impact to the trees' health and vitality (See Section 3.3.8 for more details).

Overall, it is considered that the potential for harm to occur to the root systems of retained trees can be adequately controlled through the adoption of appropriate working practices and erection of protective barriers to exclude access from vulnerable sections of trees RPAs.

Mitigation/Avoidance

Construction Exclusion Zones

To minimise the potential for harm to occur to the root systems and canopies of retained trees during development it will be necessary to implement construction exclusion zones throughout the site. These are areas surrounding the trees' RPAs and canopies in which no demolition or construction works, or related activities, will be undertaken. These zones will be demarcated by the erection of tree protection barriers prior to any works (with the exception of tree works) being carried out. The tree protection barriers can be installed as shown on Fig 1 below in order to reduce the impact to the ground by using the default system within BS5837:2012. These can be secured to the ground using road pins but the weight of the support barrels will be difficult to move.

Fig 1: Proposed Tree Protection Configuration.

It is recommended that the exclusion zones are afforded protection at all times through the use of tree protection barriers and ground protection (specified in accordance with BS5837:2012). It must be noted that any hoarding and tree protection barrier uprights driven into the ground must adopt the procedures as specified within Section 3.3.9.

Where hard surfacing already exists on site, consideration should be given so that these areas will be retained and utilised as ground protection within the RPAs of retained trees until the replacement of hard

landscaping is implemented into the construction phase of the development. The retention of the hard surfacing is deemed suitable ground protection and therefore the conflict with retained tree's roots is eliminated.

Where the replacement of hard surfacing is being considered then retaining the sub-base hard-core layer will also reduce the risk of root damage.

Arbor-Eco Consultancy, Drawing Number MB240801-01-02, in Section 5, provides a Tree Protection Plan indicating the proposed location of tree protection barriers.

All works within the RPA of a retained tree shall be carried out under the supervision of the retained Arboricultural Consultant. All tree protection measures should be confirmed for their position and suitability prior to any construction works being carried out (See Section 3.3.15 for contact details).

3.3.2 Site Construction Access

Impacts

Construction access to the site has yet to be identified, however, it will need to make use of the existing access routes in to the site off Newlands Road, minor road or existing access routes from the live construction site to the east. To minimise the potential for harm to occur to the crowns of the retained trees which overhang the route further access facilitation pruning works may be required over time due to seasonal extension growth to the existing vegetation. The extent of such pruning works should be revised prior to any construction traffic entering the site. Maximum heights of vehicles should also be investigated to ensure crown height is sufficient throughout the various phases of the development.

Additionally, where vehicles need to pass within close proximity to retained trees protective barriers should be installed to prevent vehicles accidentally encroaching into areas where retained trees are situated to minimise the potential for collision damage to trees stems occurring.

Mitigation/Avoidance

All trees surrounding the potential access routes should be adequately fenced and ground protection installed to ensure that no damage to these specimens occurs during construction.

The retained Arboricultural Consultant shall submit a summary written report or email to the local authority confirming that all tree protection measures are in place, fit for purpose and adequately signed prior to construction or demolition works being carried out.

3.3.3 Contractors Parking

Impacts

The location of contractor parking is yet to be determined but it is understood that it will occur in off-site locations, or centrally to the site, and well away from the RPAs of retained trees.

Mitigation/Avoidance

No contractor parking is to occur at this site. The Contracts Manager is to ensure that all highway laws are respected and **no parking** is to occur on any highway verge. No neighbouring property shall be inconvenienced by construction or contractor activity.

3.3.4 Site Cabins and Welfare Facilities

Impacts

The location of the Site Cabins and Welfare Facilities is yet to be determined; however, it is understood that it will occur in locations well away from the RPAs of retained trees.

Mitigation/Avoidance
Installation of protective barriers and ground protection to ensure that trees are protected from physical damage resulting from works to establish a Site Cabins and Welfare Facilities.

3.3.5 Delivery and Storage of Materials

Impacts
The proposed locations for site deliveries and materials storage during the development is yet to be determined; however, it is understood that it will occur outside of the RPAs of retained trees.

Mitigation/Avoidance
Ensure no storage occurs upon un-surfaced ground within the defined RPAs of the retained trees via the installation of protective barriers and ground protection.

3.3.6 Demolition of Existing Structures

Impacts
The proposed development of the site will require the deconstruction of a retaining wall to tie in with the proposed footpath from the A3, major trunk road following the removal of a section of hedgerow H1. So long as good working practice is adopted in conjunction with suitable tree and ground protection then the impact to the retained trees will be significantly reduced.

Mitigation/Avoidance
To prevent any ancillary works associated with the deconstruction of the wall from harming trees it will be necessary to install protective barriers prior to commencement of these works.

Additionally, where the use of 360-degree traversing vehicles is used, then they will be supervised by a banksman to ensure that any traversing arm shall not be in proximity to any retained tree.

Where hard surfacing is being replaced, then retention of the hard core sub-base layer shall be retained to prevent further incursion in to the rooting zones of these trees. The sub-base layer will provide the necessary protection to the underlying roots during this phase of development.

The location of the tree protection barriers and ground protection is shown on Arbor-Eco Consultancy, Tree Protection Plan Drawing Number MB240801-01-02, Section 5.

3.3.7 Construction of Buildings

Impacts
The proposed construction of the extension has been considered in proximity to retained trees;

Where the scaffold towers are erected within proximity to the RPAs of the retained trees the following approach should be adopted;

1. Apply the following ground protection within the RPA of the tree prior to the realignment of the tree protection barriers;

    a. For pedestrian movements only, 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 (pedestrian surface plates over 100 mm of woodchip for example), laid onto a geotextile membrane.

2. Construct the scaffold vertical tubes upon wooden blocks (to distribute the point load) with suspended walkways ensuring a layer of impermeable membrane is placed beneath the scaffold to

catch any falling debris such as curing cement as this can be phytotoxic to the roots of vegetation. All pedestrian access will use the suspended scaffold walkways as defined by the tree protection barriers as shown on Tree Protection Plan Drawing Number MB240801-01-02, Section 5.

3. Fit scaffold boards to provide a walkway of 1.5 m width.

4. Any vegetation obstructing access or deemed to be within eye-strike shall only be removed if the specification has been detailed within the Tree Works Addendum as discussed in Section 3.2.1. If this is not the case then the Contracts Manager shall seek the authority of the retained Project Arboriculturalist or Arboricultural Officer for the Local Authority (See Section 3.3.15 for more details).

To restock materials around the scaffold towers, further ground protection may be required and therefore the Contracts Manager will be responsible for the installation and supervision of this works. Once this has been carried out the retained Arboricultural Consultant will be contacted to confirm the suitability and location.

The locations of the tree protection barriers and ground protection is shown on Arbor-Eco Consultancy, Tree Protection Plan Drawing Number MB240801-01-02, Section 5.

Mitigation/Avoidance
To minimise the risk of damage occurring to the tree's crowns during the erection of scaffolding and construction it may be necessary to undertake some access facilitation pruning works, as detailed in Section 3.2.1.

The potential for direct damage to the stems of the trees will be controlled by the installation of protective barriers as shown on Arbor-Eco Consultancy, Tree Protection Plan Drawing Number MB240801-01-02, Section 5.

3.3.8 Construction of New Hard Surfacing

Impacts
Examination of Bloor Homes Ltd, drawing number SOxxx-SL-001P Site Layout, Phase 8A, Berewood, indicates that the construction of the proposed hard surfacing (access driveway and parking bays) will pass within close proximity of the RPA of tree number 1. Tree number 1 has been identified as the most vulnerable tree during these operations and it will be imperative that the RPA is protected until such time as the hard surfacing is being prepared to be installed. **This will only occur after the main house has been completed.**

The potential for significant harm to occur to the retained trees can be controlled through adoption of appropriate working techniques, construction utilising a no-dig methodology and tree protection measures along with adequate supervision.

No access shall occur within the Construction exclusion Zone without the permission of the retained Arboricultural Consultant or Arboricultural Officer for the Local Authority (See Section 3.3.15 for more details).

Mitigation/Avoidance
Wherever it is intended to undertake construction operations within or in proximity to the Root Protection Areas of trees, precautions must be taken to maintain the condition and health of tree's root systems. The proposed Site Layout provided by Bloor Homes Ltd, drawing number SOxxx-SL-001P Site Layout, Phase 8A, Berewood, indicates that there may be a requirement to realign the tree protection barriers to provide

working space ONLY to install the driveways. This will occur **ONLY** when the work is to commence and **NOT** beforehand so that the ground remains protected within the RPAs. This will be carried out under the supervision of the retained Arboricultural Consultant or Arboricultural Officer for the Local Authority (See Section 3.3.15 for more details).

In particular:

- Works shall be conducted in such a manner as to prevent physical damage to roots during construction, such as soil compaction or root severance.
- Provision for water and oxygen to reach the roots must be made and the soil structure must not be disturbed.
- Provision must be made for future root growth and precautions taken to ensure that such root growth does not cause unacceptable levels of damage to the finished construction.
- The soil must not be compacted and soil bulk density must be maintained at suitable levels for tree root growth and function. In this respect, a soil bulk density of over 1.8g/cm^3 is likely to impede root growth and function.

To achieve the above requirements for tree root growth and function the proposed hard surfaces shall be designed so that:

- No excavation of bare ground is required for their installation; to ensure that physical root damage does not occur.
- The surface can be installed without compaction of the existing soils; thus, ensuring damage to the soil structure does not occur.
- The surface is permeable; thus, ensuring that oxygen and water can reach the root system and that CO^2 can diffuse vertically out of the soil as high concentrations can cause root suffocation.

3.3.9 Boundary and Ancillary Structures

Impacts

The exact details of any proposed boundary structures are not known at this time; however, it is understood that they will remain unchanged. Where hedgerow section requires to be removed then they will be replaced as agreed with Bloor Homes Southern Ltd.

Where boundary features are being installed near to trees then supervision from the retained Arboricultural Consultant will be required.

Mitigation/Avoidance

As a precaution, the location of any concrete foundations and supporting posts needs to be carefully considered to ensure no damage to the adjacent trees occurs. For example, due to the highly alkaline leachate produced during the curing process of wet concrete, the concrete should not be poured within the RPA of a retained tree unless an impermeable liner has been installed.

Foundations for any proposed retaining wall within an RPA should not be of traditional trench style but consideration made for an above ground bridged-lintel to allow for future growth both above and below ground.

Additionally, any new fence posts should not be constructed within 1.0 m of the stem of any retained tree. Consideration for the use of half-panels to relocate fence posts away from retained trees by measuring site boundaries beforehand is recommended. This will reduce the amount of excavation for post foundations required within the RPAs of the retained trees. Any excavation for fence posts in RPAs will need to occur by hand and under arboricultural supervision to ensure no root damage occurs (See Section 3.3.15 for contact details).

No machinery should be used for the installation of fence posts and ground protection may be a consideration in some circumstances.

In accordance with BS5837:2012 all areas of construction activity within the RPA should be supervised by the retained Arboricultural Consultant (See Section 3.3.15 for contact details).

3.3.10 Site Gradients

Impacts

There will be gradient alterations across the site as shown on Rob West, Proposed Levels drawings 4166-002-5001-P01 sheets 1 to 4.

It is well documented that any change in soil level around the base of a tree can cause suffocation, reduce the percolation of vital life supporting elements such as water, oxygen and nutrients. Any level change is to be avoided and no soil level change should occur around a root collar or root crown as this can suffocate the tree. Epicormic growth of Oak trees is a significant sign of stress. Apical dieback can be a result of poor nutrient and water uptake and dieback of branches may be a result of additional internal stresses.

As previously discussed, and reiterated here, research has revealed that as little as 100 mm to 150 mm of fill placed over the roots of some tree species has caused serious deteriorating health conditions. Species and site conditions can vary and there can be other factors that impact on one tree and not another. Reduced soil aeration restricts the supply of oxygen to roots, which is required for aerobic respiration. As a consequence of poorly aerated soils, root respiration becomes anaerobic, which is inefficient and causes root growth and essential functions such as mineral uptake to reduce or stop altogether, which can threaten the health of the whole tree. Although aeration deficit may play a role in fill-induced plant injury, other factors may play an equal or greater role. In particular, altered water relations, soil compaction and mechanical injury to roots are possibly as problematic if not more so than aeration. Reductions in the availability of water to trees can result from changes in runoff and infiltration, reduced water-holding capacity, diversion of streams and drainage of the water table. From the above extract, it can be seen that building up ground within the RPA of a tree can be detrimental.

Mitigation/Avoidance

No excavation of ground or build-up of levels shall occur within the RPAs of retained trees. This is to prevent destabilising the tree or suffocation of the tree roots. In both instances, it would be detrimental to the trees' vitality and vigour.

3.3.11 Service Requirements

Impacts

As the site was previously developed there are existing service connections throughout part of it and it as such it is considered that various opportunities to create new service connections without harming trees exist.

Mitigation/Avoidance

The methodology for the installation, maintenance or removal of any services within an RPA will be in accordance with NJUG Volume 4 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'. This will include hand dug 'broken' trenches to ensure that maximum protection is given to tree roots.

It is advised that the installation of any new services and drainage occur outside the RPAs of the retained trees. It is also advised that CCTV and lighting columns should not be situated in locations which will place future pressure on trees for crown pruning due to visibility/shadowing. Any lighting bollards, road signage

or similar structures that require to be fixed to the ground with underground services shall be fitted outside of the RPAs of retained trees.

All areas of construction activity within the RPA of a retained tree should be supervised by the retained Arboricultural Consultant (See Section 3.3.15 for contact details).

3.3.13 Landscaping.

The Site Plan Layout provided by Rob West (4166-002 SK13, dated Sep 2024) indicates that there will be a number of trees planted around the site.

New tree planting should be carried out in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

Where new planting takes place then then quality topsoil shall be used. This material is a general-purpose grade topsoil to BS3882 recommendations and should be free of contaminants and other foreign objects potentially injurious to tree roots.

3.3.14 Preconstruction Recommendations

Auditable systems of site monitoring should be made available to the Local Planning Authority/Arboricultural Officer and included within the program of development construction as recommended within BS5837:2012. This should include a schedule of events whereby periods of supervision or input from the Project Arboriculturist is required (See Section 3.3.15 for contact details).

Carry out all tree works prior to any demolition or construction activity taking place.

A pre-commencement site meeting involving all interested parties should be convened to confirm;

- Demolition / deconstruction methodology;
- Phased Construction;
- Confirmed location for Tree Protection Measures;
- Underground Services Installation Methodology;
- Site Compound location and set-up;
- Parking locations;
- Audit and Periods of Supervision.

3.3.15 Contact Details

Name: Marco Bartolini
Position: Arboricultural Consultant
Mobile: 07542 093882
Email: arborecoconsultancy@gmail.com

Arboricultural Officer
Local Authority: Havant Borough Council
Address: Public Service Plaza, Civic Centre Rd, Havant PO9 2AX
Phone: 023 9244 6019

3.3.16 Additional Considerations

Planning Context; National Planning Policy Framework

It is important to note that trees are a material consideration in the UK planning system and existing trees are an important factor requiring forethought when assessing the development potential of a site, whether they are within the working area or within such proximity to it that they may be affected by construction operations.

Environmental Benefits of Trees

It is worthwhile noting that the trees can intercept many of the hostile elements humans and animals need shelter from. Trees provide shading and offer significant humidity regulation and a cooling effect felt at ground level. All trees will consume a considerable amount of ground water that will regulate the local hydrology and may assist with the removal of local flooding issues. A mature tree will consume tens of thousands of litres of water during a year. A group of trees can provide an element of acoustic dampening effect at ground level and growing next to a road many tree species have been linked with the sequestration of impurities from the atmosphere. Finally, the trees will provide some shelter from prevailing winds and inclement weather. Therefore, it can be seen that the trees will benefit, rather than hinder, the landscape in which they are growing.

Biodiversity Enhancement

Biodiversity Net Gain (BNG) is an approach to development. It makes sure that habitats for wildlife are left in a measurably better state than they were before the development.

In England, BNG is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

Developers must deliver a minimum BNG of 10%. This means a development will result in more or better-quality natural habitat than there was before development. The developer must also maintain the habitats created or enhance them for a minimum of 30 years. This applies to any off-site gains or significant on-site gains.

4. ARBORICULTURAL METHOD STATEMENT

An Arboricultural Method Statement is not considered for the project as the various aspects of the proposed demolition and construction phases that require works to be undertaken within the RPAs of retained trees can be adequately supervised by the retained Arboricultural Consultant.

5. DRAWINGS

1. Drawing MB240801-01-01 Tree Constraints Plan
2. Drawing MB240801-01-02 Tree Protection Plan (revised)

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind Is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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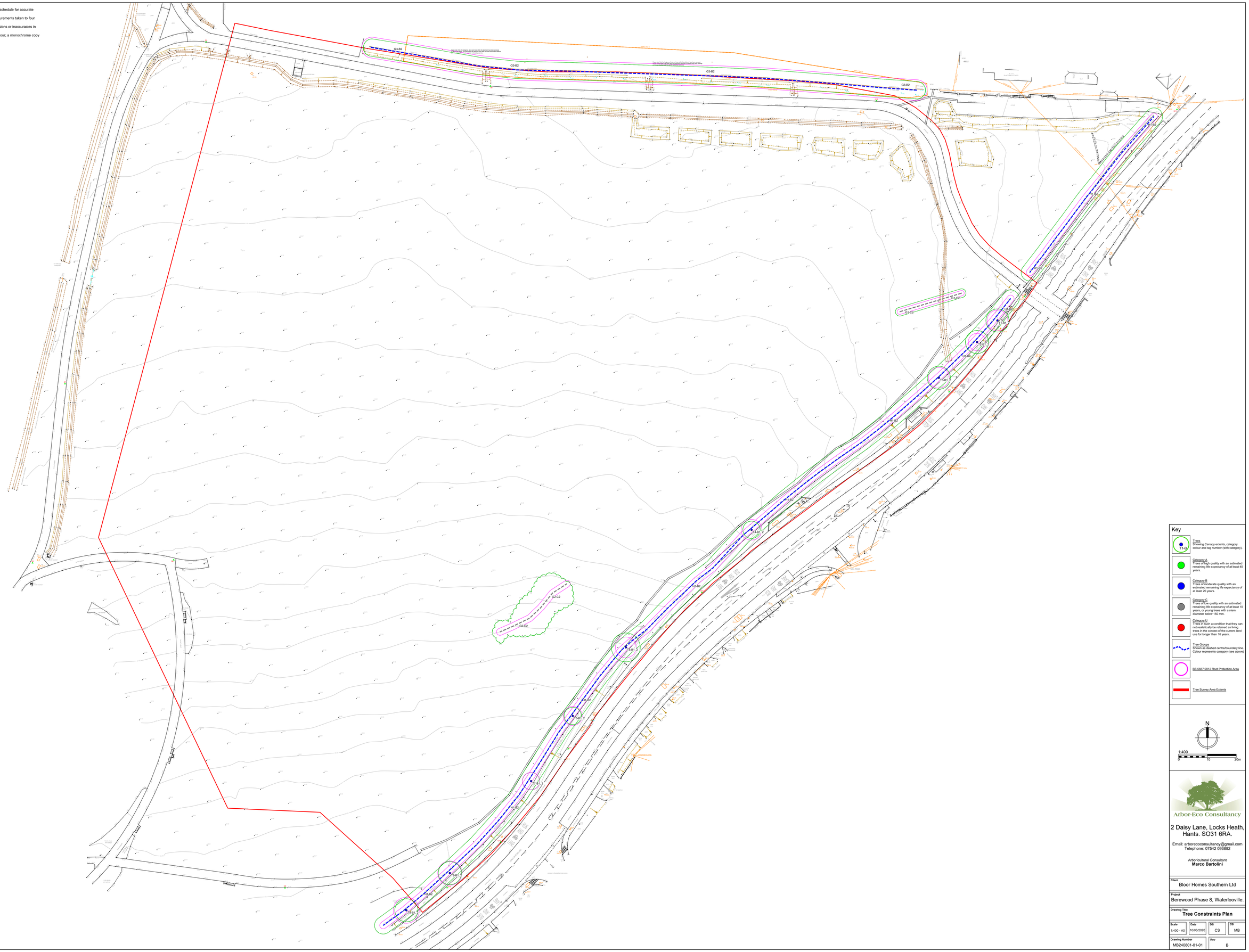

Key

- **Trees** — Showing Canopy extents, category colour and tag number (with category).
- **Category A** — Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- **Category B** — Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- **Category C** — Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.
- **Category U** — Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.
- **Tree Groups** — Shown as dashed centre/boundary line. Colour represents category (see above)
- **BS 5837:2012 Root Protection Area**
- **Tree Survey Area Extents**

N

1:400
0 10 20m

Arbor-Eco Consultancy
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Arboricultural Consultant
Marco Bartolini

Client	Bloor Homes Southern Ltd
Project	Berewood Phase 8, Waterlooville.
Drawing Title	**Tree Constraints Plan**
Scale	1:400 - A0
Date	10/03/2026
DB	CS
CB	MB
Drawing Number	MB240801-01-01
Rev	B

General Notes
Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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Newlands Footpath 732 (FP10)

Tree Protective Fencing

Side pruning works required prior to growing season of construction activity.

Turning head extended to rear boundary for possible future pedestrian connection

G3-B2

Footpath bridleway connection

Havant Bridleway 16 (BW16)

Bridleway Cycle Connection

NO ACCESS for any construction activity.

Crown lift to branch tip prune for paving access

H1 hedge will require pruning works to permit working space.

Section of H1 hedgerow to be removed to allow footpath connection.

Crown lift to provide working space to install footpath.

Footpath connection from existing to new

Footpath connection from existing to new

Key

- Trees — Showing Canopy extents, category colour and tag number (with category).
- Category A — Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B — Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- Category C — Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.
- Category U — Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.
- Tree Groups — Shown as dashed centre/boundary line. Colour represents category (see above)
- BS 5837:2012 Root Protection Area
- Tree Survey Area Extents
- Tree Protective Fencing
- Tree groups G1, G2 and a section of hedgerow H1 to be removed

N

1:400
0 10 20m

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Telephone: 07542 093882
Arboricultural Consultant
Marco Bartolini

Client: Bloor Homes Southern Ltd

Project: Berewood Phase 8, Waterlooville.

Drawing Title: **Tree Protection Plan**

Scale	Date	DB	CB
1:400 - A0	10/3/2026	CS	MB

Drawing Number: MB240801-01-02

Rev: C

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APPENDICES

APPENDIX 1: Table A1.1 – Tree Survey Schedule

APPENDIX 2: Table A2.1 – Root Protection Areas of Category A, B and C Trees

APPENDIX 3: Headings for Tree Protection Signs and Example Sign

APPENDIX 4: Tree Protection Barriers (Default and Variant)

APPENDIX 5: Photographic Montage

APPENDIX 6: Trees; Causes of Death – Construction Site

APPENDIX 1

Table A1.1 – Tree Survey Schedule

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	H't 1st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
1	Huntington Elm	1	300	9.0	1.0 S	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
2	Pedunculate Oak	1	250	9.0	1.0 N	4.0	4.0	4.0	4.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
3	Pedunculate Oak	1	300	10.0	1.0 W	4.0	4.0	4.0	4.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
4	Pedunculate Oak	1	280	7.0	1.0 E	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
5	Pedunculate Oak	1	290	12.0	1.0 S	5.0	5.0	5.0	5.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
6	Pedunculate Oak	1	270	7.0	1.0 N	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
7	Pedunculate Oak	1	230	7.0	1.0 E	3.0	3.0	3.0	3.0	1.0	1.0	1.0	1.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
8	Pedunculate Oak	1	330	8.0	1.0 N	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.

Table A1:1 Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	H't 1st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
9	Huntington Elm	1	360	11.0	1.0 E	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	EM	G	G	20+	B1,2 Int	• Artificial structures within RPA. • Dense understorey and restricted access prevented detailed assessment. • Growing on boundary bank adjacent to London Road, A3.	None at time of survey.
G1	Goat Willow	1	50	2.0	0.0 W	1.5	1.5	1.5	0.9	0.0	0.0	0.0	0.0	Y EM M	G	G	10+	C2	• Self-set scrub in field.	None at time of survey.
G2	Goat Willow	1	80	2.5	0.0 E	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y EM M	G	G	10+	C2	• Self-set scrub in field.	None at time of survey.
G3	Goat Willow, Ash, Sycamore, Hazel, Field Maple, Blackthorn, Hawthorn	1	280	12.0	0.0 S	5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	Y EM M	G	G	20+	B2	• Mixed species boundary group. • Off-site group. • Ash dieback evident. • Dense understorey and restricted access prevented detailed assessment. • Provides good visual separation. • Dead trees in group (safe).	None at time of survey.

Table A1:1 (cont'd) Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	H't 1st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
H1	Goat Willow, Hazel, Field Maple, Blackthorn, Hawthorn, Elm, Oak, Cherry Plum, Dogwood, Gelder Rose, Elder, Apple, Scots Pine, Holly, Bramble, Gorse, Viburnum.	1	100	4.0	0.0 N	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	Y EM M	G	G	20+	B2	• Part managed hedgerow. • Dense understorey and restricted access prevented detailed assessment. • Provides good visual separation. • Artificial structures within RPA.	None at time of survey.

Key

Age Class
Y: Young = tree within first third of average life expectancy
EM: Early mature = tree within second third of average life expectancy
M: Mature = tree within final third of average life expectancy
OM: Over mature = tree beyond average life expectancy
V: Veteran = shows signs of retrenchment and in decline.
D: Dead.

Physiological Condition
G: Good = no health problems
F: Fair = symptoms of ill health that may be remedied
P: Poor = poor health
D: Dead

Structural Condition
G: Good = no structural defects
F: Fair = remedial structural defects
P: Poor = significant structural defects
D: Dead

000: Estimated measurement due to access restrictions

RPA: Root Protection Area

Major deadwood: branches in excess of 50 mm diameter
Minor deadwood: branches/twigs less than 50 mm diameter

Int: Interim category due to access restrictions.

Table A1:1 (cont'd) Tree Survey Schedule

APPENDIX 2

Table A2.1 – Root Protection Areas of Trees, Groups and Hedgerows Surveyed

Tree No.	Species	Diam (mm)	Approximate Root Protection Radius (m)	Root Protection Area (m^2)
1	Huntington Elm	300	3.6	41
2	Pedunculate Oak	250	3.0	28
3	Pedunculate Oak	300	3.6	41
4	Pedunculate Oak	280	3.6	41
5	Pedunculate Oak	290	3.6	41
6	Pedunculate Oak	270	3.3	34
7	Pedunculate Oak	230	3.0	28
8	Pedunculate Oak	330	4.2	55
9	Huntington Elm	360	4.5	64
G1	Goat Willow	50	0.9*	3*
G2	Goat Willow	80	1.2*	5*
G3	Mixed Species	280	3.6*	41*
H1	Mixed Species	100	1.2*	5*

Key:
000: estimated dimensions due to access restrictions
*: Average measurement taken around centre of group or hedgerow

Table A2-1: RPA and Approximate Root Protection Radius of Trees, Groups and Hedgerows Surveyed

APPENDIX 3

Headings for Protective Barrier Notices and Example Sign

Root Protection Area (RPA) Model Notice

DON'T excavate within this area
DON'T use any form of mechanical plant with this area
DON'T store materials, plant or equipment within this area
DON'T move plant or vehicles within this area

DO contact the Local Authority Arboricultural Officer or owner of the tree if excavation within this area is unavoidable
DO protect any exposed roots uncovered within this area with dry sacking
DO backfill with a suitable inert granular and top soil material mix as soon as possible on completion of work

ANY WORK in this area requires permission from the Local Authority Arboricultural Officer

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

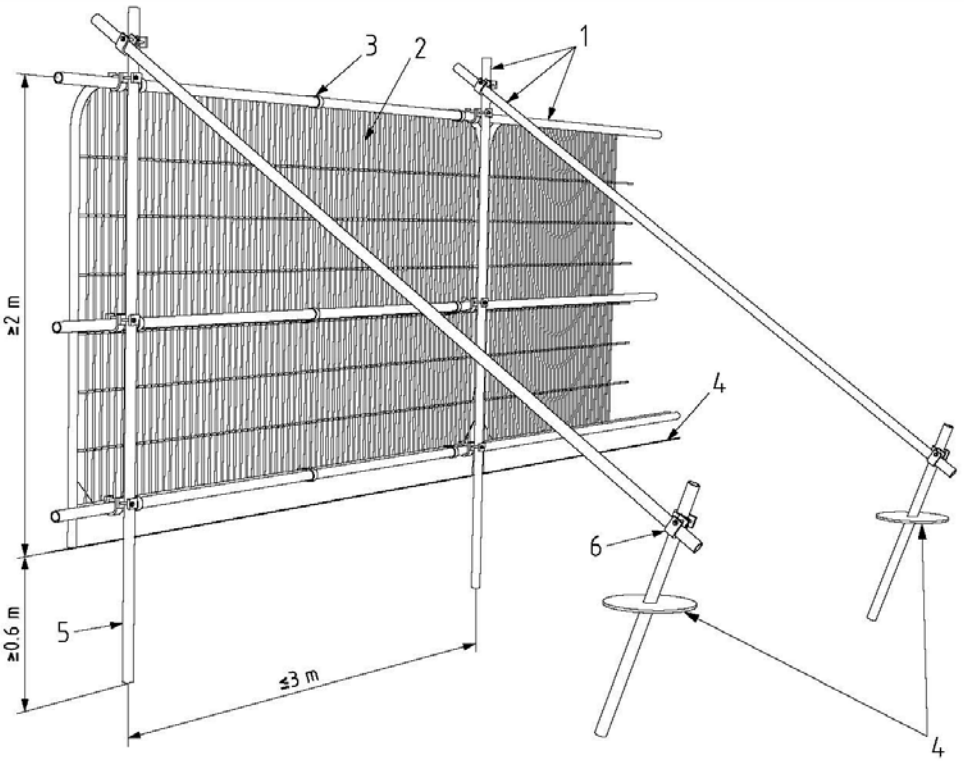
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

APPENDIX 4

Details of Protective Barrier (Default and Variant)

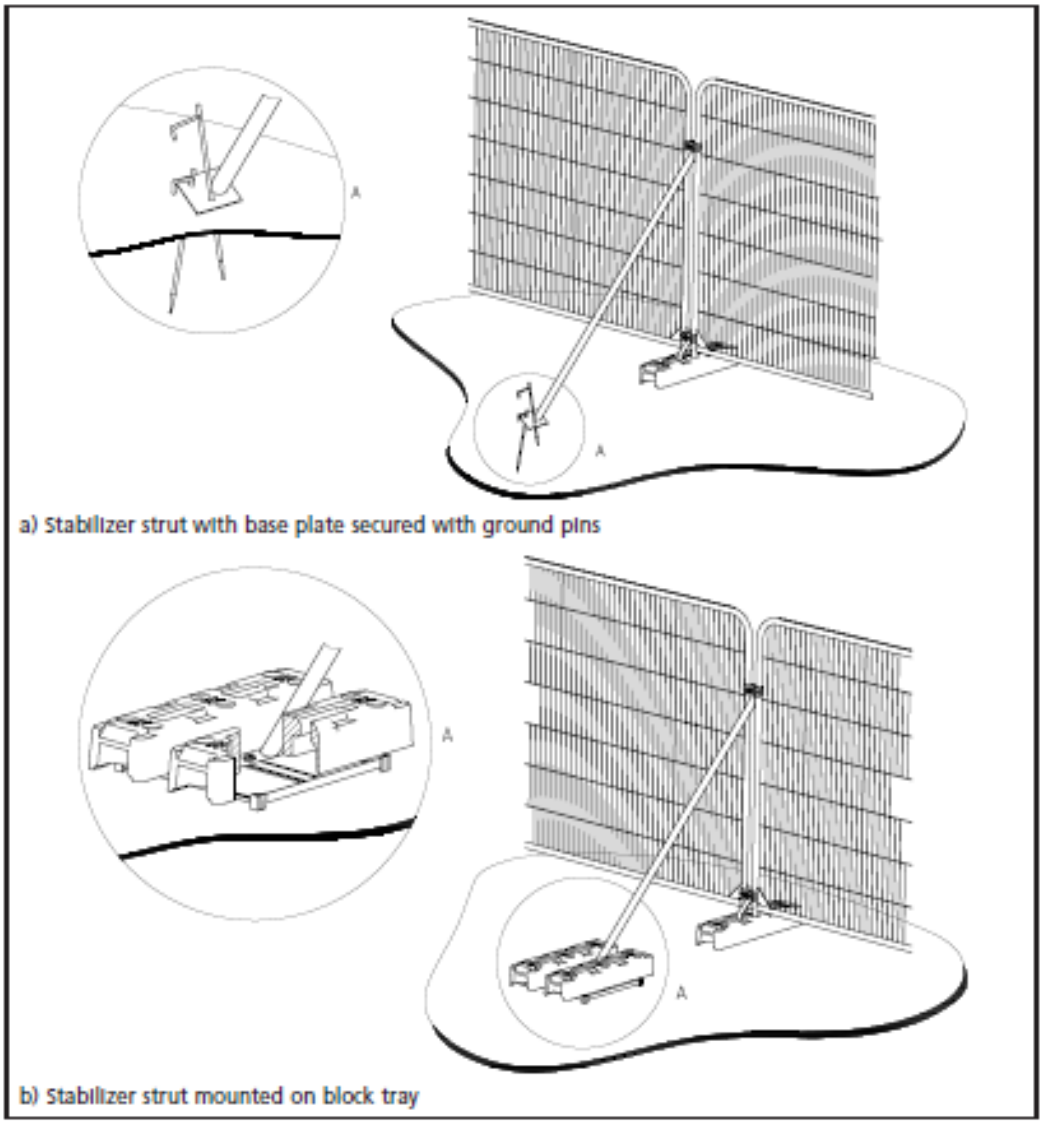
Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



APPENDIX 5

Photographic Montage

APPENDIX 6

Trees; Causes of Death – Construction Site

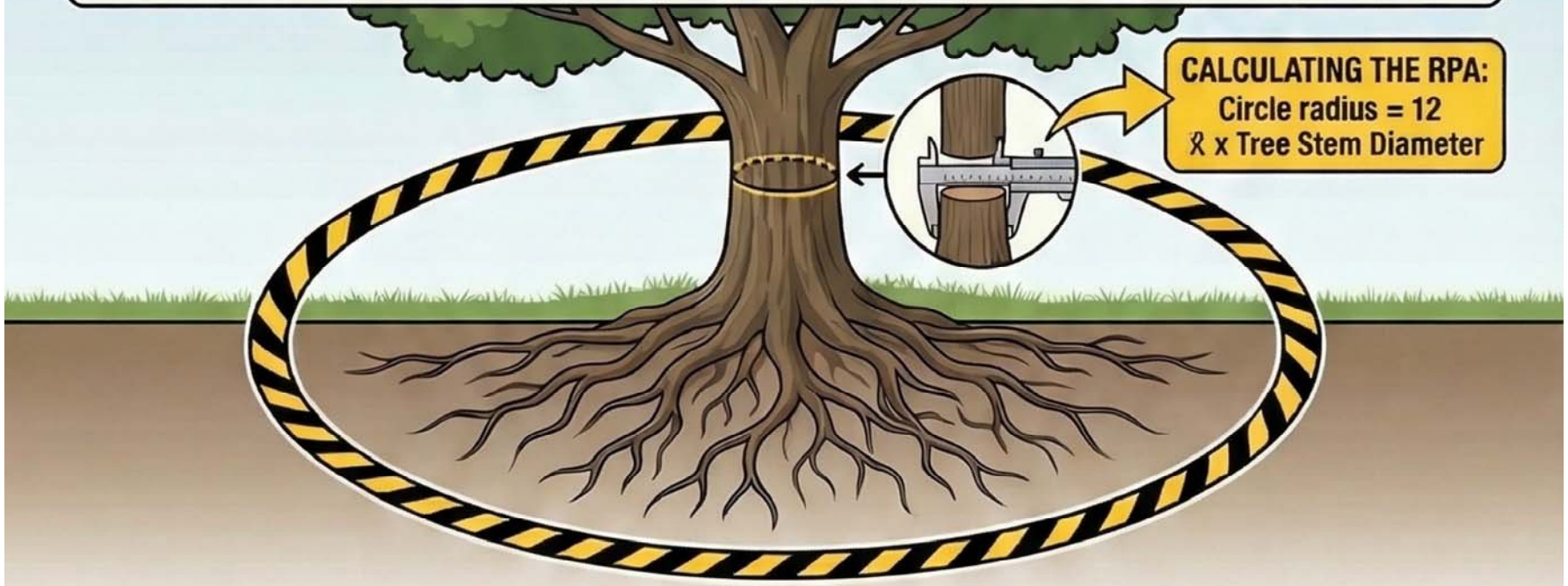
PROTECTING TREES ON SITE

ESSENTIAL RULES FOR OPERATIVES & ROOT PROTECTION

BS 5837:2012
COMPLIANCE STANDARD

THE PRIORITY PROTECTION ZONE (ROOT PROTECTION AREA - RPA)

Layout tool to maintain tree viability. Soil Structure is Sacred - Protect roots & soil structure!



FIVE ESSENTIAL RULES FOR SITE OPERATIVES

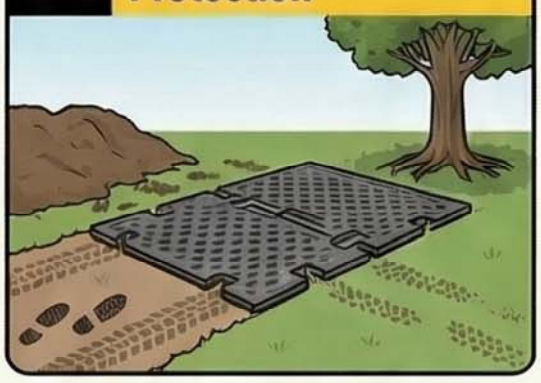
1. No Mechanical Trenching in RPAs

Use trenchless technology or approved hand-digging only to prevent root severance.

2. Respect the Construction Exclusion Zone (CEZ)

Absolute prohibition of pedestrian or vehicle access and material storage within the CEZ.

3. Mandatory Ground Protection



Use inter-linked ground protection boards if temporary access inside an RPA is authorised.

4. Keep Contaminants Away

Do not store fuel, mix concrete, or wash out mixers near protected trees.

5. Shield Exposed Roots

Immediately protect any temporarily exposed roots with damp hessian to prevent desiccation.

⚠ LEGAL NOTICE & STANDARDS

CRIMINAL OFFENCE WARNING

Unauthorised damage to trees protected by Tree Preservation Orders (TPO) is a criminal offence.

Compliance Standard All works must adhere to B5 5637:2012 and NJUG Volume 4 guidelines.

NotebookLM