# Combined Arboricultural Impact Assessment/ Method Statement
# Land at Midway Lane
# Abergavenny
# NP7 6NF



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# Introduction

This assessment was overseen by Ben Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 11 years' experience in the arboriculture industry and holding the following qualifications:
• Level 4 Diploma in Arboriculture
• BSc. Geology (University of Southampton)
• LANTRA Professional Tree Inspection Certificate (PTI)
• Various NPTC qualifications in tree surgery.

Ben is a technician member of the Arboricultural Association and attends regular training and seminars to remain up to date with current arboricultural practices.

The methodology of this report is based on the recommendations provided by the British Standards Institute document BS5837: Trees in Relation to Design, Demolition and Construction – Recommendations, as well as other recommendations provided by institutions such as the Arborical Association.

## Brief

Tree Check has been instructed by Elene Gegeshidze of Amity Planning to carry out an Arboricultural Impact Assessment and Method Statement at Land at Midway Lane, Abergavenny The purpose of this report is as follows:

- To quantify any tree losses required to make way for the proposed development.
- To quantify and prescribe any pruning works required to make way for the proposed development.
- To assess the impact that the proposed development may have on retained trees on site and to provide control measures to prevent or minimize damage to retained trees.
- To consider whether design changes could prevent or reduce tree losses on site, and whether such changes are reasonable and proportional to the retention value of affected trees.
- To provide recommendations for mitigating tree losses where appropriate.

## Baseline

This report was based on the findings outlined in the baseline report carried out by Julian Wilkes of Tree Scene Ltd.

The following information was available:

- S25090-TP-001-0-TOPO
- 2800-00(02)100B Sketch Layout (Spring Design 2026)
- 1309_R01_Green Infrastructure Statement (DP Landscape Architecture 2026)

It should be noted that this assessment is based on tree locations as recorded in the base line survey relative to the proposed design layout. These tree locations were plotted using tree locations on the topographic survey.

## Interpretation

See appendix v for a glossary of the terms commonly used in tree reports.

### BS Categories

Trees have been assigned retention categories in accordance with BS5837. These are as follows:

**Category A-** Trees with a high retention value which are either arboriculturally important, important within the landscape, or culturally/ecologically important.

**Category B-** Trees with a moderate retention value i.e. they are good examples of their species, provide some notable amenity value to the area, or provide significant ecological or cultural value.

**Category C-** Trees with a low retention value. Including trees with defects which reduce their amenity value or expected lifespan but not to the extent that they cannot be realistically retained within the development.

**Category U-** Trees of which retention is considered unrealistic within the context of the development due to poor condition and low life expectancy.

See Table 1 in the appendices of this report for more information on the allocation of categories and subcategories.

### Tree Age Ratings

Y- Young trees in their early stage of growth, have undergone minimal secondary thickening and are still primarily composed of active tissue.

EM- Early mature trees that have started to show characteristics of maturity such more developed crowns and increased stem thickness.

M- Mature fully developed trees.

OM- Over mature trees that are starting to show signs of decline.

A- Ancient trees that have reached a notably old age for their species and are therefore considered to be important.

V- Veteran trees with notable features such as wounds, cavities, cracks, etc. that provide significant habitat value. These are usually older trees.

### Root Protection Areas (RPA's)

Root Protection areas have been calculated according to BS5837 and represent the estimated minimum rooting area required by the tree to carry out its functions.

Root protections areas are shown as orange circles or polygons for all trees except those with a retention category of U in the Tree Constraints Plan. In the Tree Loss/Retention and Protection Plan, RPA's are not shown for trees proposed for removal to make way for development.

## Tree and Group Prefixes

Trees and groups are numbered with the following prefixes:

- **T-** individual trees.
- **G-** groups of trees with similar characteristics and rooting areas.
- **H-** Hedgerows.
- **W-** woodland groups, designated as such due to the presence of woodland features such as natural regeneration,

# Arboricultural Impact Assessment/Method Statement

## 1. Summary

The proposed layout retains all category A and B trees, with development arranged around the principal areas of retained tree cover. Proposed category C losses comprise 29 individually distinct trees, approximately 3,906m² of scrub growth and 23.5m of linear tree or hedge cover, with the substantial majority of the clearance by area associated with site access. A further 15 category U trees are proposed for removal due to their condition and relationship with existing or proposed targets. Limited pruning is required to provide clearance for construction and the completed development. The scope for reducing tree losses through design changes is constrained by the need to avoid increasing impacts on higher-value retained trees.

Identified impacts on retained trees can be managed through the tree protection measures and working methods specified in this report, supported by arboricultural supervision at key stages. These include construction exclusion zones, controlled access beneath crowns, sensitive fencing and landscaping methods within RPAs, and appropriate demolition arrangements. Potential future pressures arising from shading, leaf litter and perceived risk have also been considered and can be addressed through the proposed layout and ongoing management. Detailed demolition and drainage proposals require further arboricultural review, and replacement planting proposals remain to be developed to mitigate the identified losses as the scheme progresses towards formal submission.

## 2. Areas of Caution

A number of areas on site have been highlighted as areas of caution, these are areas where there is a heightened risk of damage to the above ground structure or root system of retained trees through the proposed works. Certain methodologies in this document will state that they must be followed within areas of caution. The location of all areas of caution can be found on the Tree Protection Plan within the appendix section of this report.

## 3. Site Monitoring and Auditing

A Project Arboriculturalist (PA) is to be appointed by the client to monitor the development. The below monitoring table outlines at which stages of the project PA input is required, what action is to be taken, whether works are to be held until the condition is satisfied and what documentation must be provided at each step.

| | Stage / Trigger | PA Requirement | Action | Hold Point | Responsible Party | Outcome/ Documentation (Provided to Client & LPA) |
|---|---|---|---|---|---|---|
| **Stage** | Pre Commencement | PA to attend site or consult with site manager via phone/teams. | PA to collaborate on and assess the demolition plan prior to demolition works prescribing tree protection measures as necessary. Confirm TPF layout, access routes, CEZs, sequencing | No works commence until completed | Principal Contractor | Pre-commencement site note. |
| | Correct Installation of Tree Protective Fencing and implementation of pruning | PA to sign off. | Confirm correct implementation based on a site visit or photos provided by the site manager. | Construction not to proceed until sign off has been completed | Principal Contractor | TPF sign-off Note. |
| | Installation of road surfacing beneath the crowns of trees | PA to supervise | Ensure crown area is properly protected from the wider site while the area below is accessed for | Initial access beneath crowns not permitted without arboricultural supervision. | Principal Contractor Project Arboriculturalist. | Site supervision note. |

| | Stage / Trigger | PA Requirement | Action | Hold Point | Responsible Party | Outcome/ Documentation (Provided to Client & LPA) |
|---|---|---|---|---|---|---|
| | | | road surfacing. Supervise to ensure working methods don't lead to crown damage. | | | |
| | Mid-construction compliance audit | PA to attend | Confirm fencing intact, CEZ not compromised, ground protection maintained | No hold. | PA | Interim compliance note. |
| | Fencing and soft landscaping within RPAs | PA to attend | PA to verify all other works have been completed and affected areas are not accessible to plant or vehicles. | Tree Protective Fencing not to be set back within the RPA without PA sign off. | Principal Contractor Project Arboriculturalist. | Landscaping and fencing sign-off note. |
| | Site Completion and Removal of TPF | PA to attend post-construction and meet with site manager. | Verify competition within CEZ has not occurred, confirm no further risk of tree damage through construction exists, authorise removal of Tree Protective Fence. | No hold. | PA/Contractor | Site Completion Sign off. |
| **Trigger** | Any design change affecting RPAs, TPP, CEZs, or planting areas | PA to be notified and provided with relevant drawings/ dimensions. | PA to assess for increased tree impact. | Relevant works to be held pending PA guidance and agreement from LPA if required. | Principal contractor. | Technical note or updated AIA/Method Statement with potential need for further supervision. |
| | Unexpected encroachment or need for access within an RPA. | PA to be notified and provided with relevant drawings/dimension | PA to assess for increased tree impact. | work halted until PA authorises continuation. | Principal contractor. | Technical note or updated AIA/Method Statement with potential need for further supervision. |
| | Encountering roots >50 mm diameter anywhere on site | PA to be provided photos and measurements of encountered roots as well as details of location. Site attendance may be required. | PA to determine source and significance of roots. | Work halted until PA authorises continuation. | Contractor | Site Supervision Note. |
| | Damage to fencing, CEZ breach, or unauthorised ground disturbance. | PA to be notified. | Fence to be reinstated, ground remediation to be instructed by the PA if required. | Work halted until PA sign off. | Contractor. | Site Supervision Note. |

## 4. Proposed Tree Surgery Works

The below schedule includes trees on site that require works throughout the course of the proposed development.

The location of trees proposed for removal, and the extent of proposed pruning is illustrated on the attached Tree Works Plan.

| | Ref | Species | Comments | Life Stage | Retention Category | RPA Radius (m) |
|---|---|---|---|---|---|---|
| **Removals** | G6 | Group of: Hawthorn (Crataegus monogyna), Elder (Sambucus nigra), Sycamore (Acer pseudoplatanus), Holly (Ilex aquifolium), Blackthorn (Prunus spinosa) | 2.5 m of scrubby, gappy hedge to potentially be removed to allow for footpath route (path may exploit existing gaps in woody vegetation). | EM | C | 1.2 |
| | G14 | Group of: Hawthorn *(Crataegus monogyna)*, Sycamore *(Acer pseudoplatanus)*, Elder *(Sambucus nigra)* | 310 $M^2$ of scrub growth to be removed to make way for side access and garden area of plot 23. | EM | C | 2.4 |
| | G15 | Group of: Sycamore *(Acer pseudoplatanus)*, Walnut *(Juglans regia)*, Norway Maple *(Acer platanoides)*, Elder *(Sambucus nigra)*, Hawthorn *(Crataegus monogyna)* | Removal of 3 scrubby specimens to make way for a proposed road. | EM | C | 3.6 |
| | G17 | Group of: Sycamore *(Acer pseudoplatanus)*, Hazel *(Corylus avellana)* | Removal of2 scrubby specimens to make way for plots 24-27. | EM | C | 6.0 |
| | G19 | Group of: Sycamore *(Acer pseudoplatanus)*, Goat Willow *(Salix caprea)*, Hazel *(Corylus avellana)*, Holly *(Ilex aquifolium)* | Removal of narrow, linear copse containing 4 specimens to make way for the construction plot 41. | EM | C | 4.2 |
| | G20 | Group of: Sycamore *(Acer pseudoplatanus)*, Goat Willow *(Salix caprea)*, Rowan *(Sorbus aucuparia)*, Birch *(Betula pendula)*, Plum *(Prunus spp.)* | Removal of a 21 m linear row conttaining approximately 4-5 scrubby trees to make way for a parking area. | Y | C | 1.8 |
| | G28 | Group of: Hazel *(Corylus avellana)*, Hawthorn *(Crataegus monogyna)*, Elder *(Sambucus nigra)*, Rowan *(Sorbus aucuparia)*, Goat Willow *(Salix caprea)* | Removal of 1078 $m^2$ of scrub growth make way for the proposed site entrance. | EM /M | C | 4.8 |
| | G30 | Group of: Hazel *(Corylus avellana)*, Walnut *(Juglans regia)*, Medlar *(Mespilus germanica)*, Apple *(Malus spp.)*, Cherry *(Prunus spp.)*, Plum *(Prunus spp.)* | Removal of 1641 $m^2$ of scrub growth to make way for the proposed access road as well as plots 32-35. | EM /M | C | 4.2 |
| **Removals** | G33 | Group of: Goat Willow *(Salix caprea)* | Removal of 3 trees to make way for a proposed plots 28-31. | M | C | 6.6 |
| | G40 | Group of: Holly *(Ilex aquifolium)*, Hazel *(Corylus avellana)*, Apple *(Malus spp.)*, Elder *(Sambucus nigra)*, Yew *(Taxus baccata)*, Plum *(Prunus spp.)* | Removal of 1212 $m^2$ of fair to poor condition trees to make way for the proposed site entrance. | EM | C | 3.0 |
| | G41 | Group of: Hazel *(Corylus avellana)*, Mulberry *(Morus spp.)*, Hawthorn *(Crataegus monogyna)*, Plum *(Prunus spp.)*, Elder *(Sambucus nigra)*, Highclere Holly *(Ilex × altaclerensis)* | Partial removal- 117.5 $m^2$ to be removed to make way for to make way for attenuation pond. | Y/E M | C | 1.8 |
| | G46 | Group of: Apple *(Malus spp.)*, Pear *(Pyrus spp.)* | Removal of 5 fruit trees to make way for access road and access for the construction of the attenuation pond. | EM | C | 1.2 |
| | G57 | Elder *(Sambucus nigra)* | Removal of 3 scrubby specimens to make way for the proposed access road | EM | C | 3.0 |

| | Ref | Species | Comments | Life Stage | Retention Category | RPA Radius (m) |
|---|---|---|---|---|---|---|
| Removals | T10 | Collapsed | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | | U | 0.0 |
| | T16 | Sycamore *(Acer pseudoplatanus)* | Removal to make way for plots 24-27. | EM | C | 3.5 |
| | T18 | Sycamore *(Acer pseudoplatanus)* | Removal to make way for plots 24-27. | EM | C | 5.4 |
| | T24 | Lawson Cypress *(Chamaecyparis lawsoniana)* | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance. | EM | U | 0.0 |
| | T26 | Dead | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance. | | U | 0 |
| | T27 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance. | M | U | 0.0 |
| | T28 | Norway Maple *(Acer platanoides)* | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance. | M | U | 0.0 |
| | T29 | Apple *(Malus spp.)* | Removal to make way for a proposed road. | M | C | 3.6 |
| | T32 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | M | U | 0.0 |
| | T34 | Goat Willow *(Salix caprea)* | Removal to make way for a proposed plots 28-31 | M | C | 5.8 |
| | T35 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | M | U | 0.0 |
| | T36 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | EM | U | 0.0 |
| | T37 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | EM | U | 0.0 |
| | T38 | Douglas Fir *(Pseudotsuga menziesii)* | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance. | EM | U | 0.0 |
| | T42 | Sawara Cypress *(Chamaecyparis pisifera)* | to be removed to make way for to make way for attenuation pond. | EM | C | 2.4 |
| | T45 | Laburnum *(Laburnum anagyroides)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | EM | U | 0.0 |

| | Ref | Species | Comments | Life Stage | Retention Category | RPA Radius (m) |
|---|---|---|---|---|---|---|
| | T52 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | EM | U | 0.0 |
| | T7 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | M | U | 0.0 |
| | T8 | Holly *(Ilex aquifolium)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | EM | U | 0.2 |
| | T9 | Ash *(Fraxinus excelsior)* | Removal due to the retention category of U and the presence of existing targets within potential falling distance. | M | U | 0.0 |
| **Pruning** | G1 | Group of: Sycamore *(Acer pseudoplatanus)* | Crown raising to 5.2m to allow access beneath crown and 1-2 m reduction of the western crown to provide clearance around plots 1-12. | EM | B | 4.2 |
| | G2 | Group of: Sycamore *(Acer pseudoplatanus)* | 1-2 m reduction of the western crown to provide clearance around plots 1-12. | M | B | 5.4 |
| | T23 | Norway Maple *(Acer platanoides)* | Crown raising to 5.2m to allow access beneath crown. | M | C | 7.8 |
| | T31 | Copper Beech *(Fagus sylvatica 'Purpurea')* | Crown raising by 200 mm to achieve 5.2 m clearance to allow access beneath crown. | M | A | 13.0 |

The below table summarises the total tree losses per retention category.

| | Individually Distinct Trees (number of) | Indistinct Scrub Growth (area in $m^2$) | Linear Rows of Indistinct Trees/Hedge (length in m) |
|---|---|---|---|
| **Category A Trees** | **0** | **0** | **0** |
| **Category B trees** | **0** | **0** | **0** |
| **Category C trees** | **29** | **4358** | **23.5** |
| **Category U trees** | **15** | **0** | **0** |

## 4.1. Tree Removal

During tree removal and clearance operations, there is a risk of damage to retained trees, including the below ground root systems that are vulnerable to the effects of soil compaction. There is also the risk of retained trees being mistakenly removed. The following methodology must be followed to ensure that no damage or mistaken removal of retained trees occurs:

#### 4.1.1. Control Measures for Tree Removal

- All trees proposed for removal are to be marked clearly with orange paint spots by the site manager prior to the commencement of clearance works. If there is any uncertainty, a qualified arboriculturalist is to be consulted.
- All tree clearance work is to be carried out before development works begin on site, so that construction exclusion zones can be effectively established around all retained trees.
- All vehicles and plant are to be kept out of the RPA of retained trees during tree clearance, if access into the RPA of retained trees is required, protective, interlocking ground mats, suitable for the expected loads, is to be installed to prevent soil compaction within RPA's.
- Steps are to be taken to avoid collisions between removed trees and retained trees during felling or dismantling operations, these may include, but are not limited to, use of winches, pull ropes, aerial rigging techniques and other assisted felling techniques and are to be prescribed by the contractor based on the specific conditions on site.
- Arisings, such as wood chip and timber are not to be piled against the base of retained trees if left on site.
- Any damage to retained trees is to be reported to the project arboriculturalist.
- Removal of any trees not listed above must be discussed with the project arboriculturalist beforehand.

### 4.2. Pruning Works

Pruning works, as outlined in the Schedule of Tree Works are proposed on site.

Poor pruning techniques can cause a large reduction in the amenity value of a tree, reduce it's lifespan or lead to significant structural and physiological issues, requiring extensive remedial work. The following methodology must be followed during all pruning works:

#### 4.2.1. Control Measures for Pruning Works

**Trees**

- All pruning must be undertaken by competent and trained personnel, in accordance with BS 3998:2010 – Tree Work – Recommendations.
- Cuts must be made to the nearest appropriate lateral growth point, using natural target pruning. Ideally, retained laterals should be at least one-third the diameter of the removed branch. Cuts that result in a retained lateral with a diameter less than one-third of the removed section are generally undesirable and should be avoided where practicable.
- Contractors must be made aware of any legal constraints affecting the trees to be pruned, such as Tree Preservation Orders (TPOs) or Conservation Area designations. No work shall proceed on such trees without prior written approval from the Local Planning Authority.
- No cuts greater than 100mm in diameter shall be made on the main stem unless specifically identified in the Schedule of Tree Works.
- All cuts to the main stem must retain the branch collar, using natural target pruning techniques. The branch collar must not be damaged or removed, as it is vital in defending the tree from pathogen entry.

**Crown Raising**

- All crown raising operations shall be carried out by competent and trained arborists, in full compliance with BS 3998:2010 – Tree Work – Recommendations.
- The extent of crown raising (i.e. the final height of the lowest retained branches above ground level) shall be as specified in the Schedule of Tree Works or as directed by the supervising arborist.
- No branch greater than 100mm in diameter shall be removed from the main stem or primary scaffold limbs unless specifically detailed in the approved Schedule of Works.
- All cuts shall be made using natural target pruning techniques, ensuring the branch collar is retained and not damaged or removed, to prevent pathogen ingress and promote natural wound occlusion.
- Crown raising shall be undertaken in a manner that maintains a balanced, natural crown form, avoiding the creation of an excessively uniform "lollipop" appearance.

- Where possible, secondary or subordinate branches should be shortened rather than removed entirely, to achieve the desired clearance while minimising the size and number of pruning wounds.
- The vertical distribution of foliage shall be maintained over at least two-thirds of the total tree height wherever practicable, in accordance with BS 3998 guidance.

## 5. Construction Exclusion Zones

The following trees and groups can be segregated from the proposed works within construction exclusion zones for the entirety of the development, with no requirement for access into their root protection or crown areas, and no conflict between the proposed layout of site and their above or below ground structures:

- G2
- G6
- G11
- G13
- G21
- G41
- G56
- T3
- T4
- T5
- T12
- T25
- T39
- T43
- T44
- T47
- T48
- T49
- T50
- T51
- T53
- T54
- T55
- T58

All trees, including those for which full segregation throughout development is not possible, will be segregated, as far as is possible from the development area by natural or pre-existing features on site, or by the installation of physical barriers as outlined below:

### 5.1. Method for Establishing Construction Exclusion Zones

- By maintaining a construction exclusion zone, with tree protective barrier fencing segregating retained trees from the rest of site, physical damage, both mechanical and related to soil compaction can be avoided.
- Tree protective barrier fencing must be installed in the configuration outlined in the Tree Protection Plan.
- The crowns and root protection areas (having been measured and marked out on site) of all trees must be enclosed within the tree protective fencing. If more space is needed than the current crown extents allow, the project arboriculturalist must be consulted in order to arrange appropriate pruning measures.
- The standard level of tree protective fencing, as prescribed in BS5837 and shown in Appendix iv is recommended for this site due to the expected use of heavy machinery and the scale of the proposed works on site.
- Machine operators are to be briefed on positioning their equipment to avoid contact with branches from retained trees and the root protection zones.
- Where access is required beneath the crown or canopy area of retained trees, all pruning work to facilitate access must be caried out prior to the development stage, height restriction barriers are to be installed at the edge of areas of caution where entry beneath barriers occurs, and banksmen are to be assigned to make sure no contact with branches is made during the movement or use of plant.
- No materials are to be stored within the RPA's of trees for any period of time, including in areas of caution.
- All RPA's are to be checked on site and marked out, measured based on the RPA radius shown in the tree schedule.

## 6. Tree Locations

Consideration of the potential impact of development on proposed trees is based on the location of trees (as plotted in the baseline survey) relative to the proposed layout provided by the clients. Due to the potential for inaccuracies and discrepancies between drawings and realities on site, the site manager or project arboriculturalist must mark out root protection areas and the extents of proposed structures on site to verify the following:

- Unless otherwise accounted for in this report, there is sufficient space on site for the crowns and RPA's of all trees on site (based on their RPA radius shown in the tree schedule) to be fenced off for the duration of works.
- Where this report specifies that RPAs or tree crowns will be encroached upon, the actual on-site distances between trees and the conflicting features must be measured and verified to ensure they match the figures stated in this report.

If discrepancies exist, the project arboriculturalist is to be informed, so that updated assessments can be made.

# 7. Schedules of RPA and Crown Incursions

### 7.1.1. RPA Incursions

The schedule below outlines trees where the RPA cannot be fully segregated from the development area and describes the type and significance of the incursions that occur.

| Reference | Tag | Life Stage | Retention Category | RPA Radius (m) | RPA Area (M2)* | Type of Incursion | Incursion Area (M2) | Proportion of RPA Affected | Impact or Risk | Tree Protection Methodology |
|---|---|---|---|---|---|---|---|---|---|---|
| G22 | N/A | M | B | 6.0 | 113.1 | Fencing to be installed within the RPA | N/A | N/A | Risk of root severance during the excavation of fence post holes within RPA.<br>Risk of chemical damage from concrete within RPA. | 8.1 Method for Installing Fencing within RPAs |
| G22 | N/A | M | B | 6.0 | 113.1 | Soft landscaping (grass seed) to be installed within the RPA | 45.4** | 40.2 | Low risk due to non-invasive nature of grass seeding, provided work is carried out sensitively, rotavation, level changes or other mechanical cultivation prior to seeding is likely to lead to root loss. | 8.2.Method for Soft Landscaping within the RPA's of Trees. |

RPA's for groups represent the area per individual tree of the group, not the group as a whole.

**Incursion area represents an approximation of the area per effected tree within the group based on the formula provided in appendix vi.

### 7.1.2. Crown Area Incursions

| Reference | Life Stage | Retention Category | Crown Spread (m) N | E | S | W | Total Crown Area (m) | Type of Incursion | Incursion Area (M2) | Impact or Risk | Methodology Applied |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G1 | EM | B | 6.0 | 6.0 | 5.0 | 7.0 | 140.0 | Work to take place beneath crown | 8.0 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | 8.3 Method for work beneath crowns. |
| T23 | M | C | 3.0 | 7.0 | 10.0 | 12.0 | 198.0 | Work to take place beneath crown | 18 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | 8.3 Method for work beneath crowns. |
| T31 | M | A | 14.0 | 16.0 | 12.0 | 8.0 | 485.0 | Work to take place beneath crown | 31 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | 8.3 Method for work beneath crowns. |

RPA's for groups represent the area per individual tree of the group, not the group as a whole.

**Incursion area represents an approximation of the area per effected tree within the group based on the formula provided in appendix vi.

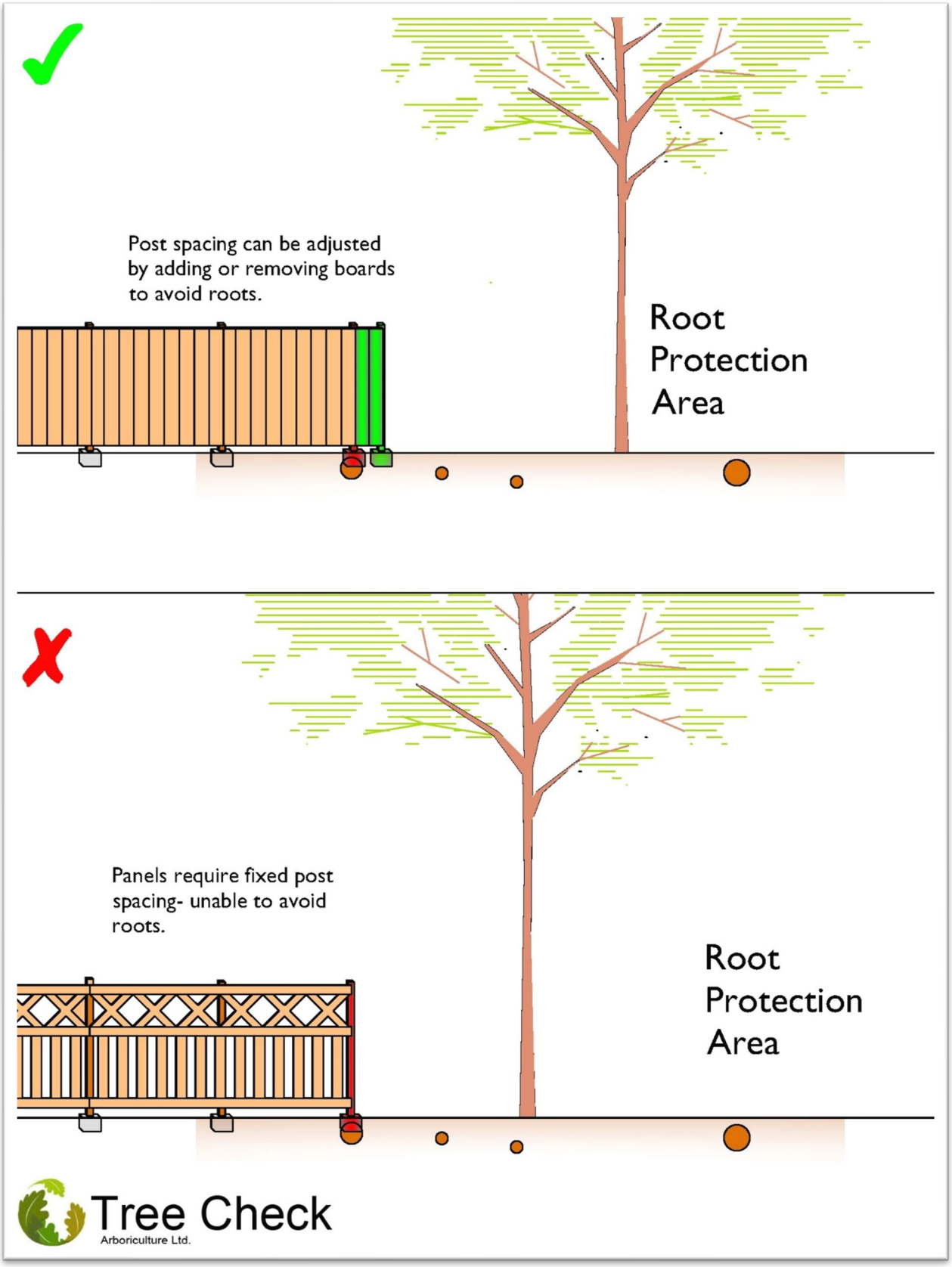
## 8. Protection Measures for RPA and Crown Incursions

The following methodologies have been applied against trees in the Schedule of RPA and Crown Incursions and must be followed in the areas indicated on the Tree Protection Plan.

### 8.1. Method for Installing Fencing Within RPAs.

- Fencing within the RPA is not to take place until all other works have been completed on site or completed structures have rendered the area inaccessible to plant and machinery that may be present on site. This is to be verified by the Project Arboriculturalist prior to access being permitted in the affected area.
- The fencing must incorporate a flexible design with allowance for the distance between posts to vary. Rigid designs involving pre constructed fence panels are not suitable as they require a uniform distance between fence posts.
- The project arboriculturalist is to supervise all excavations within RPA's and test each site by driving a steel rod into the ground prior to excavation in order to detect or rule out the presence of large roots.
- Spots containing no large roots are to be selected prior to any post holes being excavated on the entire fence line. With excavations only occurring once the project manager and project arboriculturalist agreeing on all post sites within the area of caution.
- Posts holes may be excavated by hand using twin handled post hole spades (conventional spades are unsuitable as the lead to larger excavations than necessary), driven into the ground by hand or with a 1.5t excavator, or excavated with an auger on a 1.5t excavator.
- All post holes are to be lined with an impermeable membrane prior to prevent leaching of concrete chemicals into the surrounding soil.

### 8.1.1. Diagram B- Appropriate Boundary Fencing for use Within the RPA's of Trees.



### 8.2. Method for Soft Landscaping within the RPA's of Trees.

#### 8.2.1. Ground Preparation

- Landscaping within the RPA is not to take place until all other works have been completed on site or completed structures have rendered the area inaccessible to plant and machinery that may be present on site. This is to be verified by the Project Arboriculturalist prior to access being permitted in the affected areas.
- No rotavation, mechanical tilling, or soil stripping is permitted within RPAs.
- If soil decompaction is necessary due to pre-existing compaction, this must be done by hand, using garden forks to a depth not exceeding 150mm, avoiding disturbance to any roots encountered.
- Where cultivation is required, it must be shallow surface raking only to avoid disturbing underlying root structures.
- Importation of topsoil or compost is only permitted where essential and must be BS3882-compliant and applied as a light surface dressing (max 100mm). Existing soil must remain undisturbed unless otherwise approved.

#### 8.2.2. Grass and Turf Introduction

- Turfing and seeding must be carried out without excavation. The soil surface may be lightly raked to ensure seed contact, but must not be disturbed beyond this.
- No imported subsoil or topsoil is to be spread or graded within RPAs to build levels for turf laying.
- Where turf is laid, it must be hand-placed with no mechanical dragging or rolling. Turf must be kept clear of the base of tree stems to prevent collar rot.
- Pedestrian access only is permitted during turf laying. Any access requiring machinery must be carried out using temporary ground protection and with arboricultural oversight.

### 8.3. Method for Works Beneath Crowns

- Areas beneath the crowns of retained trees where road surfacing is proposed are to be held within the construction exclusion zone until access is required to carry out these works.
- All access facilitation pruning, as outlined within the Schedule of Tree Works, is to be completed before access beneath the crowns occurs, providing clearance of 5.2m above the proposed finished road level.
- When road surfacing works are to take place, tree protective fencing is to be set back to allow access to the working area. Height restriction barriers set at 5m are to be installed at the access points before machinery enters beneath the crowns.
- Before works beneath the crowns commence, the project arboriculturalist is to confirm that the revised fencing configuration, height restriction barriers and crown clearances are appropriate for the proposed machinery. Initial road surfacing operations in each area are to be supervised by the project arboriculturalist, who is to determine whether further arboricultural supervision is required.
- Machinery operating beneath the crowns must remain below the 5m height restriction throughout its use, including when raising tipping bodies, booms or loads. A banksman is to oversee machinery movements to ensure contact with branches does not occur.
- Once road surfacing is complete, either the height restriction barriers are to remain in place to control continued access beneath the crowns, or tree protective fencing is to be reinstated in its original configuration, returning these areas to the construction exclusion zone.

## 9. Impact Through Demolition of Existing Structures on Site

The existing house and its surrounding hard surfacing and paths are to be demolished. These features lie immediately adjacent to the RPAs of several retained trees and beneath the crowns of others, presenting a risk of damage through machinery movements, falling debris and disturbance of adjacent rooting areas. A detailed demolition plan is not currently available; however, demolition will require tree protective fencing to segregate retained trees from the working area, with machinery positioned outside the construction exclusion zones. Low vibration techniques are to be used, with a grab attachment used to dismantle and draw material away from retained trees in a controlled manner. Debris must be stored outside RPAs, and machinery movements and the handling of materials beneath crowns must be controlled to prevent contact with branches.

Additional hard landscaping, a shelter and other structures are present within a tree-covered area away from the house, where no other development is proposed. It is currently unclear whether these features are to be removed. If removal is proposed, the project arboriculturalist must be involved in preparing the demolition plan to ensure that suitable access arrangements, ground protection and tree protective fencing are incorporated. The approach must prevent large machinery from entering the tree-covered area and provide for the controlled dismantling and removal of materials, ensuring that demolition beneath crowns does not damage retained trees or their rooting areas.

## 10. Impact Through Chemical Damage

There is a risk of chemical damage to trees from the mixing and storage of cement and other damaging chemicals.

All are at significant risk of chemical damage during development works and the methodology outlined below must be followed in order to prevent such incidents from occurring:

### 10.1. Method for the Control of Chemicals Potentially Harmful to Trees

- Materials that may have an adverse effect on the health of trees will not be stored or transported within the RPA. E.g., oil, bitumen, cement, and concrete.
- Concrete and cement will not be mixed within 10m of the base of trees.
- Cement and concrete will be mixed downhill from the base of trees or watercourses to avoid the risk of contamination to runoff.
- Where it is not possible to mix and store concrete downhill from trees and watercourses, sediment barriers will be used to prevent runoff from storage and mixing areas.

## 11. Impact of Retained Trees on the Proposed Structure

### 11.1. Shading Issues

Retained tree cover is concentrated largely within the centre of the site, with the proposed development arranged around it. All proposed residential plots retain an open aspect to either the east or west. Although retained trees will shade parts of some plots at certain times of day, none are enclosed by tree cover to an extent likely to create an oppressive relationship or prolonged shading throughout the day. The arrangement is therefore not anticipated to result in significant future pressure for the removal or excessive pruning of retained trees on shading grounds.

### 11.2. Nuisance Caused by Detritus from Trees

Falling leaves, twigs and other material can cause significant nuisance to residents and users of site, leading to increased pressure for removal, the most common causes of nuisance from detritus are outlined here:

#### 11.2.1. Accumulation of Leaves in Guttering-

The following trees are likely to contribute to an accumulation of leaf litter in the guttering of proposed structures due to their proximity and species, leading to increased pressure for removal and potential damage to the structure:

- G1
- G11
- T4
- T5
- T58

The following control measures are therefore proposed:

- Install gutter guards on all new guttering on site to prevent leaf buildup.

### 11.2.2. Accumulation of leaves on hard surfaces-

The following trees are likely to contribute to an accumulation of leaf litter on proposed patios/footpaths/roads/driveways, potentially leading to increased pressure for removal as well as an increased risk of accidents on site:

- G1
- G6
- G11
- G13
- G22
- G56
- T5
- T25
- T31

The following control measures are therefore proposed:

- Implement a site management plan to include monthly removal of leaf litter from hard surfacing during the Autumn (September-December)

## 11.3. Perceived Threat of Damage to Property Through Tree Failure

The presence of large retained trees within the site presents the potential for perceived risk of damage to property, which may cause anxiety among future residents and lead to pressure for tree removal or excessive pruning. This can be readily managed through a programme of regular tree inspections undertaken by an arboriculturalist holding a Level 4 qualification in arboriculture or above. Inspection findings and any recommended works are to be clearly communicated to residents, providing reassurance that tree condition is being monitored and any identified risks are being appropriately managed.

## 11.4. Displacement of Lightweight Structures through Secondary Root Thickening

No lightweight structures such as porches or outbuildings are proposed within close proximity to the structural rooting areas of trees and there is therefore minimum risk of damage of this nature occurring on site under the current conditions.

## 11.5. Indirect Damage Through Shrinkable Clay Soils

Larger trees can cause indirect damage to structures by removing water from clay rich soils, causing them to contract, which potentially leads to subsidence.

- No soil analysis has been carried out but, geotechnical advice including soil testing should be taken when construction is taking place near large trees. For advice on avoiding subsidence related damage refer to NHBC Chapter 4.2.
- If soil testing reveals a high level of plasticity, consult a suitably qualified arboriculturalist to work alongside project engineers to determine necessary foundation depths in accordance with NHBC Chapter 4.2.
- The removal of mature trees prior to development in an attempt to prevent subsidence issues is not generally advisable as it may lead to heave, causing damage to built structures.

# 12. Drainage and SUDS

No detailed drainage plans have been provided. The layout appears to show an attenuation feature in the southeastern part of the site, outside the RPAs of retained trees, which is assumed to receive runoff from the proposed roads and associated hard surfaces. No drainage infrastructure is shown within or crossing RPAs, and the available information does not indicate any significant alteration to water availability within retained rooting areas. The detailed drainage design must be reviewed once available to confirm that service routes and drainage arrangements avoid adverse impacts on retained trees.

## 13. Scope for Preventing Tree Losses through Design Change

Substantial loss of category C trees is proposed, almost entirely to facilitate site access. The layout avoids the removal of all category A and B trees, and realigning the access road to retain category C trees would bring construction closer to these higher-value trees, increasing the risk of damage to their crowns and rooting areas. There is therefore limited scope to reduce access-related tree losses without increasing impacts on trees of greater arboricultural value.

Where category C trees conflict with proposed residential plots, reducing the number of dwellings to secure their retention would be disproportionate to their arboricultural value. Further design changes to retain these trees are therefore not considered warranted.

## 14. Mitigation of Tree Losses

Replacement planting proposals have not been provided at this stage. A planting scheme is to be developed to mitigate the proposed tree losses, with the extent, species composition and locations of replacement planting to be confirmed as the scheme progresses towards formal submission.

# Appendix

-Appendix i: Tree Works Plan showing the location of trees to be removed and retained.

-Appendix ii: Tree Protection Plan showing all retained trees relative to the proposed layout as well as all tree protection features.

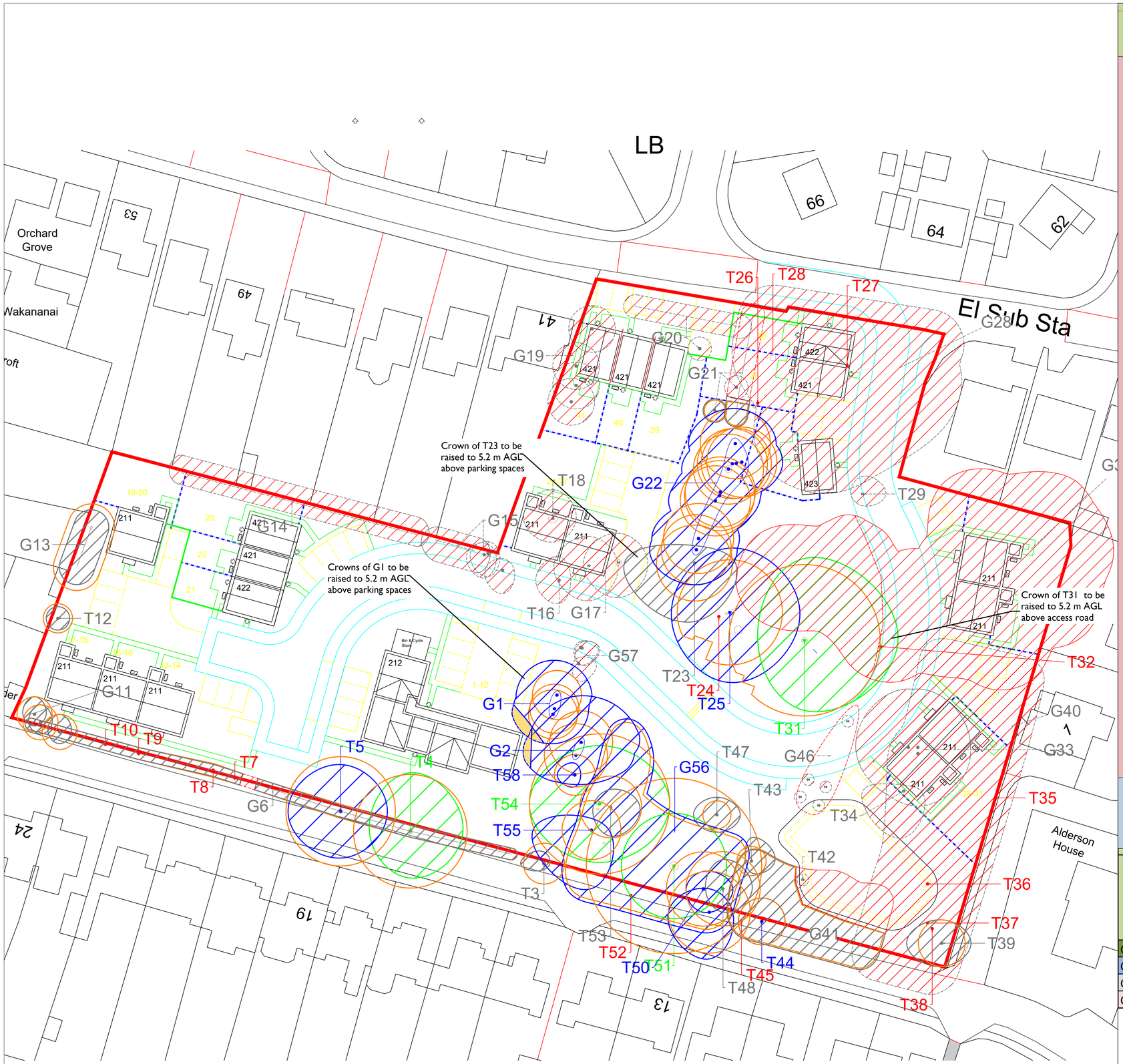
-Appendix iii: A cascade chart from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations explaining the categorisation of trees.

-Appendix iv: A diagram showing the recommended configuration for tree protective fencing, from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations.

-Appendix v: A Glossary of terms and phrases commonly used in tree reports.

-Appendix vi: Formulas and Calculations.

-




| SCHEDULE OF TREE WORK | | | | | | |
|---|---|---|---|---|---|---|
| | Ref | Species | Comments | Life Stage | Retention Category | RPA Radius (m) |
| Removals | G14 | Group of: Hawthorn (*Crataegus monogyna*) , Sycamore (*Acer pseudoplatanus*) , Elder (*Sambucus nigra*) | 310 M² of scrub growth to be removed to make way for side access and garden area of plot 23 | EM | C | 2.4 |
| | G15 | Group of: Sycamore (*Acer pseudoplatanus*) , Walnut (*Juglans regia*) , Norway Maple (*Acer platanoides*) , Elder (*Sambucus nigra*) , Hawthorn (*Crataegus monogyna*) | Removal of 3 scrubby specimens to make way for a proposed road | EM | C | 3.6 |
| | G17 | Group of: Sycamore (*Acer pseudoplatanus*) , Hazel (*Corylus avellana*) | Removal of2 scrubby specimens to make way for plots 24-27 | EM | C | 6.0 |
| | G19 | Group of: Sycamore (*Acer pseudoplatanus*) , Goat Willow (*Salix caprea*) , Hazel (*Corylus avellana*) , Holly (*Ilex aquifolium*) | Removal of narrow, linear copse containing 4 specimens to make way for the construction plot 41. | EM | C | 4.2 |
| | G20 | Group of: Sycamore (*Acer pseudoplatanus*) , Goat Willow (*Salix caprea*) , Rowan (*Sorbus aucuparia*) , Birch (*Betula pendula*) , Plum (*Prunus spp.*) | Removal of a 21 m linear row conttaining approximately 4-5 scrubby trees to make way for a parking area. | Y | C | 1.8 |
| | G28 | Group of: Hazel (*Corylus avellana*) , Hawthorn (*Crataegus monogyna*) , Elder (*Sambucus nigra*) , Rowan (*Sorbus aucuparia*) , Goat Willow (*Salix caprea*) | Removal of 1078 m² of scrub growth make way for the proposed site entrance | EM/ M | C | 4.8 |
| | G30 | Group of: Hazel (*Corylus avellana*) , Walnut (*Juglans regia*) , Medlar (*Mespilus germanica*) , Apple (*Malus spp.*) , Cherry (*Prunus spp.*) , Plum (*Prunus spp.*) | Removal of 1641 m2 of scrub growth to make way for the proposed access road as well as plots 32-35. | EM/ M | C | 4.2 |
| | G33 | Group of: Goat Willow (*Salix caprea*) | Removal of 3 trees to make way for a proposed plots 28-31 | M | C | 6.6 |
| | G40 | Group of: Holly (*Ilex aquifolium*) , Hazel (*Corylus avellana*) , Apple (*Malus spp.*) , Elder (*Sambucus nigra*) , Yew (*Taxus baccata*) , Plum (*Prunus spp.*) | Removal of 1212 m² of fair to poor condition trees to make way for the proposed site entrance | EM | C | 3.0 |
| | G41 | Group of: Hazel (*Corylus avellana*) , Mulberry (*Morus spp.*) , Hawthorn (*Crataegus monogyna*) , Plum (*Prunus spp.*) , Elder (*Sambucus nigra*) , Highclere Holly (*Ilex × altaclerensis*) | Partial removal- 117.5 m² to be removed to make way for to make way for attenuation pond | Y/E M | C | 1.8 |
| | G46 | Group of: Apple (*Malus spp.*) , Pear (*Pyrus spp.*) | Removal of 5 fruit trees to make way for access road and access for the construction of the attenuation pond | EM | C | 1.2 |
| | G57 | Elder (*Sambucus nigra*) | Removal of 3 scrubby specimens to make way for the proposed access road | EM | C | 3.0 |
| | T10 | Collapsed | Removal due to the retention category of U and the presence of existing targets within potential falling distance | | U | |
| | T16 | Sycamore (*Acer pseudoplatanus*) | Removal to make way for plots 24-27 | EM | C | 3.5 |
| | T18 | Sycamore (*Acer pseudoplatanus*) | Removal to make way for plots 24-27 | EM | C | 5.4 |
| | T24 | Lawson Cypress (*Chamaecyparis lawsoniana*) | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance | EM | U | 3.5 |
| | T26 | Dead | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance | | U | |
| | T27 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the proposed | M | U | 10.8 |
| | T28 | Norway Maple (*Acer platanoides*) | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance | M | U | 7.3 |
| | T29 | Apple (*Malus spp.*) | Removal to make way for a proposed road | M | C | 3.6 |
| | T32 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | M | U | 10.2 |
| | T34 | Goat Willow (*Salix caprea*) | Removal to make way for a proposed plots 28-31 | M | C | 5.8 |
| | T35 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | M | U | 7.7 |
| | T36 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | EM | U | 5.2 |
| | T37 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | EM | U | 4.9 |
| | T38 | Douglas Fir (*Pseudotsuga menziesii*) | Removal due to the retention category of U and the proposed introduction of targets within potential falling distance | EM | U | 4.6 |
| | T42 | Sawara Cypress (*Chamaecyparis pisifera*) | to be removed to make way for to make way for attenuation pond | EM | C | 2.4 |
| | T45 | Laburnum (*Laburnum anagyroides*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | EM | U | 2.0 |
| | T52 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | EM | U | 5.2 |
| | T7 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | M | U | 7.0 |
| | T8 | Holly (*Ilex aquifolium*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | EM | U | 4.2 |
| | T9 | Ash (*Fraxinus excelsior*) | Removal due to the retention category of U and the presence of existing targets within potential falling distance | M | U | 8.8 |
| Pruning | G1 | Group of: Sycamore (*Acer pseudoplatanus*) | Crown raising to 5.2m to allow access beneath crown and 1-2 m reduction of the western crown to provide clearance around plots 1-12 | EM | B | 4.2 |
| | G2 | Group of: Sycamore (*Acer pseudoplatanus*) | 1-2 m reduction of the western crown to provide clearance around plots 1-12 | M | B | 5.4 |
| | T23 | Norway Maple (*Acer platanoides*) | Crown raising to 5.2m to allow access beneath crown | M | C | 7.8 |
| | T31 | Copper Beech (*Fagus sylvatica 'Purpurea'*) | Crown raising to by 200 mm to achieve 5.2 m clearance to allow access beneath crown | M | A | 13.0 |

Tree Losses

| | Individually Distinct Trees (number of) | Indisctinct Scrub Growth (area in m²) | Linear Rows of Indistinct Trees/Hedge (length in m) |
|---|---|---|---|
| Category A Trees | 0 | 0 | 0 |
| Category B trees | 0 | 0 | 0 |
| Category C trees | 29 | 4358 | 21 |
| Category U trees | 15 | 0 | 0 |

## Key

- Category A. Trees with high retention value.
- Category B. Trees with moderate retention value.
- Category C. Trees with low retention value.
- Category U. Trees unsuitable for retention due to condition
- Root Protection Area (RPA)

## Tree Key

Canopy extents, hatched area represents area within the canopy.

T1 Location of tree base, taken from position on TOPO or GPS.

Reference number (T for trees, G for groups, W for woodlands, H for hedges).

RPA- an indication of the estimated minumum rooting area required by the tree. Calculated in accordance with BS5837.

- Category C trees to be removed to make way for the proposed layout
- Category U trees to be removed due to poor condition
- Category C groups to be partially removed to make way for the proposed layout.

Area to be removed
Area to be retained

- Crowns to be reduced through pruning

Crown removed area reduced through pruning
Crown area to be retained

Drawing designed to be viewed in colour.
Indicative only, check all RPA's on site in accordance with table.

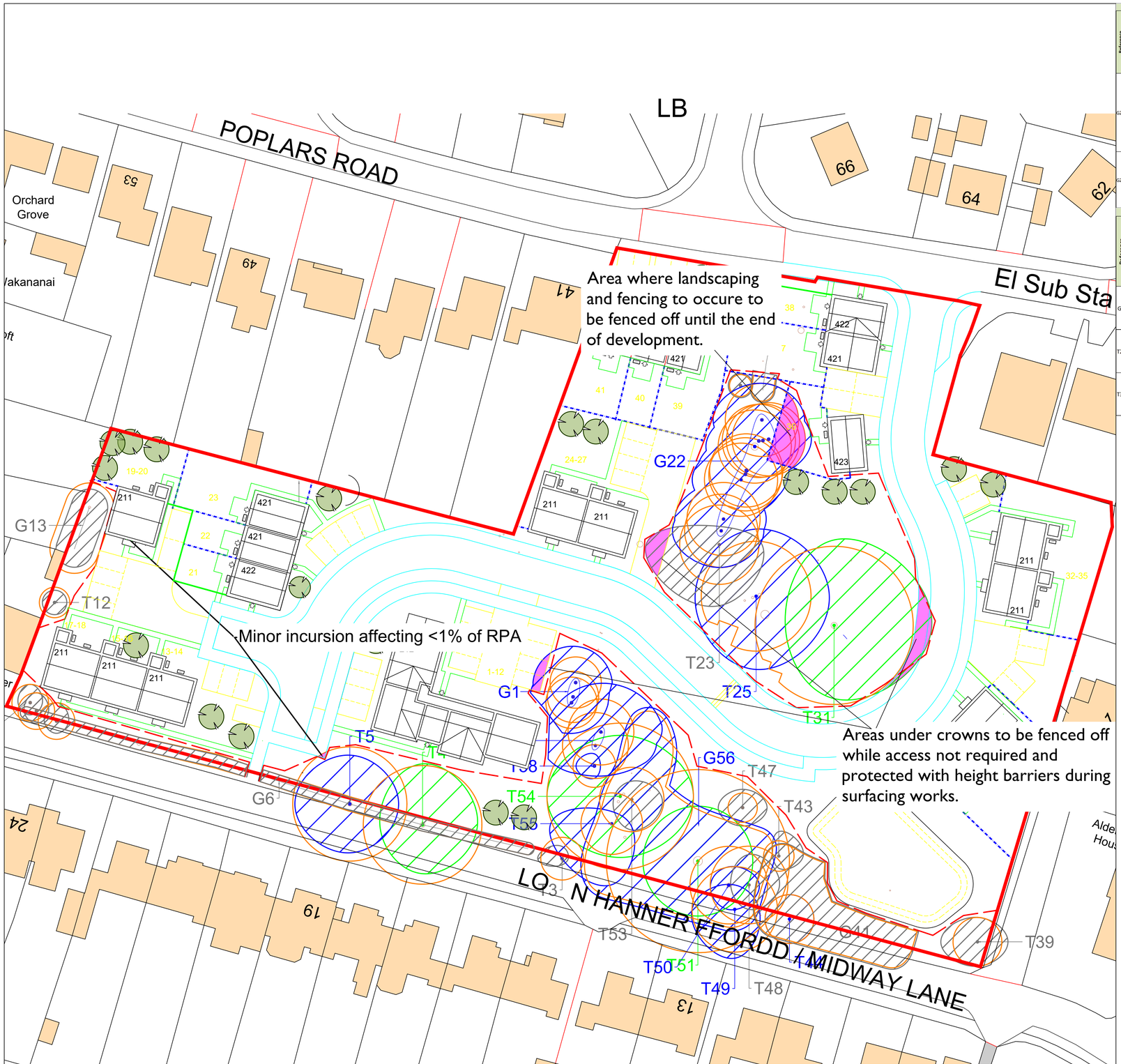
# Land at Midway Lane
# Tree Works Plan
## 1:350 at A1

| Client | Amity Planning |
|---|---|
| Survey Code | 26143 |
| Drawn by | BC |
| Surveyed by | BC |
| Date | 02/10/2026 |


Tree Check Arboriculture Ltd.

Ben Clark
TechArborA, Dip Arb L4 (ABC)

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**RPA Incursions**

| Reference | Tag | Life Stage | Retention Category | RPA Radius (m) | RPA Area (M2)* | Type of Incursion | Incursion Area (M2) | Proportion of RPA Affected | Impact or Risk | Proposed Methodology (to be detailed in AMS) |
|---|---|---|---|---|---|---|---|---|---|---|
| G22 | N/A | M | B | 6.0 | 113.1 | Fencing to be installed within the RPA | N/A | N/A | Risk of root severance during the excavation of fence post holes within RPA.<br>Risk of chemical damage from concrete within RPA. | Fencing design based on variable post distance, not employing fixed length panels which would dictate post locations.<br>Post holes within RPAs dug by hand under arb supervision in locations selected for absence of significant roots.<br>Areas of caution where fencing is proposed to be held in CEZ until construction phase is complete |
| G22 | N/A | M | B | 6.0 | 113.1 | Soft landscaping (grass seed) to be installed within the RPA | 45.4** | 40.2 | Low risk due to non-invasive nature of grass seeding, providing work is carried out sensitively, rotovation, level changes or other mechanical cultivation prior to seeding is likely to lead to root loss. | Seeding to be carried out with minimal cultivation within RPAs, limited to light scraping back of existing vegetation.<br>Areas of caution where fencing takes place to be held within the CEZ until construction phase is complete. |

**Crown Area Incursions**

| Reference | Life Stage | Retention Category | Crown Spread (m) N | E | S | W | Total Crown Area (m) | Type of Incursion | Incursion Area (M2) | Impact or Risk | Methodology Applied |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G1 | EM | B | 6.0 | 6.0 | 5.0 | 7.0 | 140.0 | Work to take place beneath crown | 8.0 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | Area under crowns to be held within CEZ apart from when underlying road surfacing is being laid.<br>Height barriers to be used when areas beneath crown are made accessible. |
| T23 | M | C | 3.0 | 7.0 | 10.0 | 12.0 | 198.0 | Work to take place beneath crown | 18 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | Area under crowns to be held within CEZ apart from when underlying road surfacing is being laid.<br>Height barriers to be used when areas beneath crown are made accessible. |
| T31 | M | A | 14.0 | 16.0 | 12.0 | 8.0 | 485.0 | Work to take place beneath crown | 31 | Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. | Area under crowns to be held within CEZ apart from when underlying road surfacing is being laid.<br>Height barriers to be used when areas beneath crown are made accessible. |

## Key

- Category A. Trees with high retention value.
- Category B. Trees with moderate retention value.
- Category C. Trees with low retention value.
- Category U. Trees unsuitable for retention due to condition
- Root Protection Area (RPA)

## Tree Key

Canopy extents, hatched area represents area within the canopy.

T1 — Location of tree base, taken from position on TOPO or GPS.

Reference number (T for trees, G for groups, W for woodlands, H for hedges).

RPA- an indication of the estimated minumum rooting area required by the tree. Calculated in accordance with BS5837.

Tree Protective Fence

Areas of Caution where measures outlined in the Land at Midway Lane Combined AIA and Method Statement must be observed.

Drawing designed to be viewed in colour.
Indicative only, check all RPA's on site in accordance with table.

# Land at Midway Lane
# Tree Works Plan

1:350 at A1

| Client | Amity Planning |
|---|---|
| Survey Code | 26143 |
| Drawn by | BC |
| Surveyed by | BC |
| Date | 02/10/2026 |

Tree Check Arboriculture Ltd.
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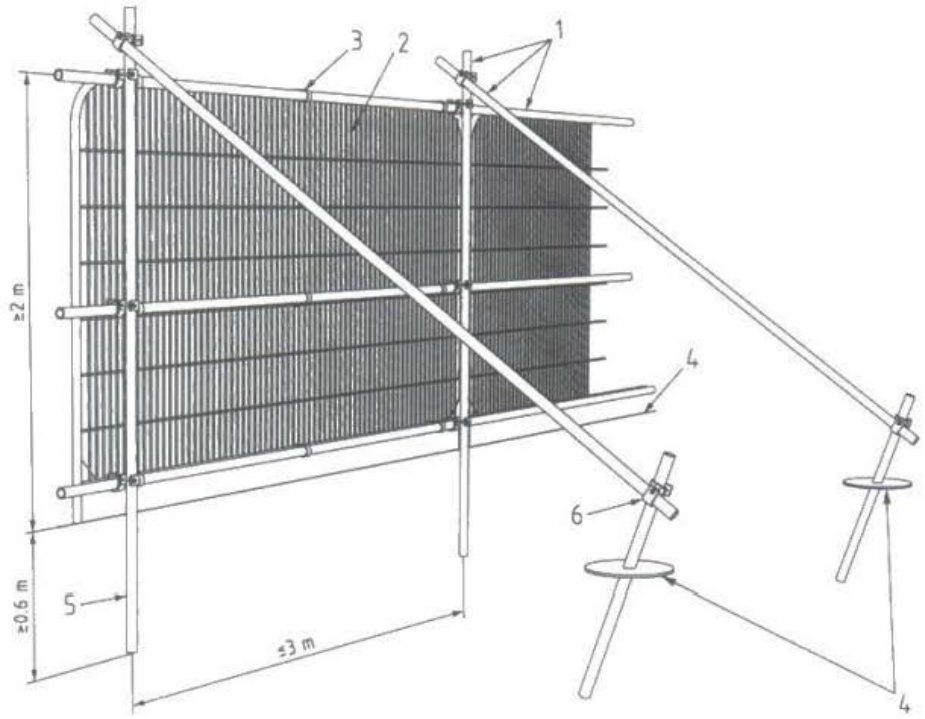
# Appendix iii: Cascade Table for the Categorisation of Trees (BS5837)

## Table 1 – Cascade chart for tree quality assessment

| Category and definition | Criteria (including subcategories where appropriate) | | | |
|---|---|---|---|---|
| Category U<br>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years | • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)<br>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline<br>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality<br>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7 | | | BRITISH STANDARD BS 5837:2012 |
| | 1 Mainly Arboricultural values | 2 Mainly landscape values | 3 Mainly cultural values, including conservation | |
| Category A<br>Those of high quality with an estimated remaining life expectancy of at least 40 years | Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue) | Trees, groups or woodlands of particular visual importance as Arboricultural and/or landscape features | Trees, groups or woodlands of significant conservation; historical, commemorative or other value (e.g. veteran trees or wood-pasture) | |
| Category B<br>Those of moderate quality with an estimated remaining life expectancy of at least 20 years | Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation | Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality | Trees with material conservation or other cultural benefits | |
| Category C<br>Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm | Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories | Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits | Trees with no material conservation or other cultural value | |

# Appendix iv: Recommended Configuration for Tree Protective Fencing (BS5837)

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

# Appendix v: Glossary

Aerial Inspection: **A close inspection of the aerial part of a tree, either by mobile elevated work platform (MEWP) or by a tree surgeon (climbing inspection).Adaptive Growth;** The growth of new wood in response to a stress concentration in the structure of a tree

**Adventitious;** A shoot which arises from tissue other than a growing shoot apex or bud, for instance in callus associated with a wound.

**Anchorage;** The holding of the structural root system of a tree with in the soil,.

**Architecture;** the formation and distribution of a trees branch system.

**Arboricultural Impact Assessment:** That part of the BS 5837 (2012) procedure that evaluates the tree-related constraints to a development (loss of trees, encroachment into root protection areas etc.).

**Arboricultural Method Statement:** That part of the BS 5837 (2012) procedure that sets out how site works should be carried out near trees to avoid accidental damage.

**Arboriculturalist:** A person skilled or knowledgeable in the field of arboriculture. The alternative term 'arboriculturalist' is sometimes used. A Person trained and experienced in the management of trees, and trees in relation to construction.,

**Assessment;** The process of examining the variables involving a trees condition and location in order to assess the risk posed by an individual tree.

**Bole (trunk):** The main , vertical stem or trunk of a tree.

**Branch:** a limb extending from the main stem or parent branch of a tree

**Canopy:** the combined foliage of a group of trees or a woodland, i.e. the combined area of numerous crowns.

**Construction Exclusion Zone;** The part of a development site from which all pedestrian and vehicular movements are excluded by protective fencing, typically to ensure the wellbeing of trees, during site works. Usually determined by the RPA of a tree.

**Crown:** in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

**Defect:** Any feature of a tree that is likely to make it less safe (in the case of a structural defect) or otherwise to reduce its health, longevity, landscape prominence or conservation value for any other reason.

**Dysfunction:** The cessation of physiological function in woody material, especially vascular functions such as water and sap transportation.

**Failure:** Fracture or deformation in any load bearing part of the tree, compromising stability or causing loss of support for part of, or all of the tree structure,

**Group:** More than one tree in close proximity that possess sufficient similarity or cohesiveness that they can be treated as a single entity for the purpose of this report.

**Heave: deformation of shrinkable clay soil related to the expansion caused by rehydration.**

**Leader:** the dominant, vertical shoot or stem of a tree.

**Pruning:** The cutting off or cutting back of tree branches or foliage to direct growth, remove an obstructing part, mitigate a nuisance, make safe, remove a diseased part, increase longevity, simulate natural damage, enhance habitat for wildlife etc.

**Retained Tree:** a tree that has been considered suitable for retention and therefore selected to remain as part of the final site layout.

**Risk:** the likelihood of a hazard to cause actual harm to people or property,

**Root Protection Area (RPA);** The area around the base of a tree that contains sufficient root volume to ensure the future well-being of the tree in the event of nearby soil disturbance (as on a development site). It is calculated according to guidelines in BS 5837 (2012).

**Subsidence (branch):** Branches, especially if spreading, tend gradually to subside under their own weight, and may eventually reach ground level in large open-grown trees. Rapid subsidence may result in crown separation or congested bark and can lead to branch failure where there is no support within the elastic limit of a given branch.

**Subsidence (soil):** Broadly, the downward movement of ground and an affected foundation influenced by soil properties, weather, foundation depth and nearby vegetation.

**Targets:** An element of tree risk: the subject of injury or damage within range of a hazard.

**Tree:** The definition of 'tree' is a composite of tree species, tree form and tree size. The blue book offers the following: A perennial plant with a self-supporting woody main stem, usually developing woody branches at some distance from the ground and growing to a considerable height and size. This definition has the three main elements in general form. **For the purposes of 5837 surveys, only plants with a stem diameter of 75mm or above are considered trees.**

**Tree Constraint Plan (TCP):** Site plan showing the tree-related constraints to development as envisaged in BS 5837 (2012). Common constraints are the loss of trees, encroachment into a tree's root protection area.

**Tree Condition Inspection/Survey:** A procedure to inspect a tree or trees. Variables used to describe a tree include position (if not already plotted on a topographical survey), species identity, maturity, various dimensions (main stem diameter, height, crown radius etc.), aspects of form, vigour, condition, incidence of pests, diseases, damage and defects, evidence of past management etc. Site factors, position in the landscape and site usage may also be relevant. , usually including its position, species identity, dimensions, age class, condition, conservation value etc. as appropriate, and to identify and evaluate defects. It is also common to make management recommendations (see schedule of works). Tree inspection is a fundamental of tree management and advisory practice in arboriculture.

**Tree Preservation Order:** (UK) an order made by a local authority or other planning authority to protect a tree, group of trees, area of (scattered) trees or woodland under Part VIII of the Town and Country Planning Act 1990. There have been several amendments, the latest being the Town and Country Planning (Tree Preservation) (England) Regulations 2012. An order is generally made on the grounds of amenity and expediency. Anyone proposing works to a TPO tree must seek prior consent from the authority using the form 1APP. With the advent of the 2012 regulations, some of the detail in existing TPOs in England has been revoked.

**Tree Protection Plan:** scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

**Trunk:** see bole.

**Vigour:** The health and resilience of a tree (from the Latin 'to be strong'), reflected in the capacity of the whole tree to grow (see growth rate). The term is often used as a description of overall condition on a qualitative scale from 'high' to 'low'.

**Visual Tree Assessment (VTA):** The standard approach to tree risk assessment consisting of the diagnosis of structural defects and the evaluation of their significance from visible signs and the application of biomechanical criteria. Simple equipment such as a sounding mallet, probe and binoculars are commonly used.

**Wind exposure:** the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity, often taking into account prevailing wind directions.

**Windthrow:** the blowing over of a tree at its roots.

# Appendix vi: Formulas and Calculations

## Method used to estimate RPA incursion area (per tree)

We treat the group RPA as a **circle of radius** $R$ (from the average DBH).

Using an AutoCAD overlay of the site plan and our tree data, we **measured**:

- the **average depth** that works extend **beyond the RPA line**, and
- the **average width** $W$ of that incursion strip.

For an "average" tree, we model that strip by two parallel lines cutting the circle.
Let $D = R -$ (average depth) be the distance from the RPA centre to the inner line of the incursion.
The **incursion area per tree** is then the overlap of that strip with the circle:

$$A = [(D+W)\sqrt{R^2-(D+W)^2} - D\sqrt{R^2-D^2}] \; + \; R^2 \left[\arcsin\frac{D+W}{R} - \arcsin\frac{D}{R}\right].$$

(The maximum width W of an incursion is R-D.)

**Definitions:**
$R$= RPA radius from average DBH; $W$= average incursion width;
$D = R -$ average depth= distance from centre to the inner line.
W = The distance between the inner line and the outer edge of the incursion object, or the outer edge of the circle, whichever is closest.

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