

Tree Condition Report Arboricultural Impact Assessment Method Statement and Tree Protection

Land at 22 Hawthorn Road, Shrewsbury

For Mr Ben Nimmo

Site Visit: 30th January 2024

Report written: 30th January 2024

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Tree Protection Plan

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Photo Detail: Tree condition illustration ref. Sect 2.2

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BS 5837 2012 Protection illustrations x2

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Appendix 4 Glossary of Arboricultural Terms

1.0 Remit:

Check the condition of trees identified on the Site Drawing provided by Base Architecture an Arboricultural Impact Assessment, Method Statement and Tree Protection Plan to BS5837 (2012) Trees in relation to design, demolition and construction – Recommendations.

2.0 Report limitations:

The conclusion and recommendations in this report are valid for a period of one year, or a lesser period where indicated in the report. All trees are susceptible to exceptional weather events or deterioration resulting from other environmental changes in close proximity to the tree. The evaluation is based upon Visual Tree Assessment (Mattheck & Breloer 2001). Observations have been made from ground level with the aid of binoculars.

2.1 **Statutory Obligations**

Bats and the Law (Woodland Management for Bats 2005)

'The Wildlife and Countryside Act 1981 makes it an offence to disturb, damage or destroy bats or their roosts. The Act applies in both England & Wales and requires consultation with the appropriate SNCO before carrying out activities which might harm or disturb bats or their roosts.

The Act is amended by the CROW Act 2000. This adds *recklessness* to the offence of damaging or destroying a place a bat uses for shelter or disturbing a bat while using a roost.

The Conservation (Natural Habitats Regulations 1994) implements the European Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992, amended August 2007 & Oct 2010. Under the regulations, damaging or destroying a breeding site or resting place is an absolute offence, regardless of whether the act of doing so may be regarded as reckless, deliberate or accidental.

Wild Birds (Mynors 2002) The Primary legislation affecting wild birds in England, Scotland and Wales is the Wildlife and Countryside Act 1981 (as amended). In January 2001 the Countryside and Rights of Way Act 2000 (CRoW) included amendments, which strengthened the law in England and Wales. The basic principle of the Wildlife and Countryside Act 1981 (as amended) is that all wild birds, their nests and eggs, are protected by law and some rare species are afforded special protection. There are certain exemptions to this notably in respect of wildfowl, game birds and various species that may cause damage. (Cowan 2002)

Felling licence: Subject to tree size, location, condition and other Statutory protection, or prior planning approval, not more than 5m³ of timber can be felled in any Calendar quarter without first obtaining a Forestry Commission (FC) felling licence. Failure to obtain a licence where required is a prosecutable offence. Detailed information including exemptions can be found on the FC web site

Conservation Area and Tree Protection Orders: The Local Authority protects trees within the district by the use of and administration of Tree Preservation Orders (TPOs). Trees can also be protected if they are within a Conservation Area. TPOs are used to protect trees (including areas of woodland) where their removal would have a significant impact on the local environment and its enjoyment by the public. TPOs prohibit the cutting down, uprooting, willful damage or destruction of trees. Any works to a tree(s) protected by a TPO or falling within a Conservation Area first requires the consent of the Local Authority.

It is a prosecutable offence to carry out work to a tree protected by a TPO, or remove it, without the prior consent of the Local Authority. Detailed information including exemptions can be found on the Local Authority web site

2.2 Tree Condition Survey and Arboricultural Impact Assessment (AIA)

Inspection method: Visual Tree Assessment (VTA) from ground level.

Location: land at 22 Hawthorn Road, Shrewsbury **Date:** 30th January 2024

Protection Status: unknown at the time of survey.

Limitations: Trees and shrubs have been identified, current height measured to the nearest metre and ultimate height assessed with reference to The Hillier Manual of Trees and Shrubs. A Visual Tree Assessment (VTA) has been carried out on trees in, or adjacent to, the development site. Refer to proposed site layout drawing for tree locations. The risk assessment and recommendations are valid for a period of one year. No detection equipment has been used other than a sounding hammer and metal probe.

NB. All trees are at risk of failure through exceptional weather conditions.

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Identification No.	T1 (On neighbouring property)
Species	Common hawthorn <i>Crataegus monogyna</i>
Current Height (M)	9m
Ultimate Height (M)	9m
Current Stem Dia (cm) at 1.5m	23cm (estimated)
Crown clearance	2m
Crown Spread (M)	Radius: 1.5m
Growth stage	Mature
<p>Tree Condition: Root: No visual evidence of soil movement. Stem: wounds occluding Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 23cm diameter at 1.5m $(0.23 \times 12) = 2.8\text{m radius}$. Total RPA required at current stage of growth = 24m² Arboricultural Impact Assessment AIA:</p> <ul style="list-style-type: none"> • The existing driveway falls within the RPA of T1. This is a permeable, gravel driveway. • The proposed extension falls outside the RPA of T1 • Construction access will be required within the RPA. • No alteration of soil levels or new trench excavation is permitted within RPA <p>Method Statement: construction of proposed extension</p> <ul style="list-style-type: none"> • Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended 	

Identification No.	T2
Species	Mulberry
Current Height (M)	topped at 5m regrowth to 9m
Ultimate Height (M)	9m
Current Stem Dia (cm) at 1.5m	29cm and 17cm
Crown clearance	5m
Crown Spread (M)	Radius: 2m
Growth stage	Late mature
<p>Tree Condition: Root: no soil movement. Stem: large topping cuts, but vigorous regrowth from pruning cuts. Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of multiple diameter at 1.5m. $\sqrt{(0.29^2 + 0.17^2)} \times 12 = 4\text{m radius}$ Total RPA required at current stage of growth = 50m² Arboricultural Impact Assessment AIA:</p> <ul style="list-style-type: none"> • No alteration of soil levels or new trench excavation is permitted within RPA • The proposed extension falls outside the RPA of T2. • No materials will need to stored within the RPA <p>Method Statement: construction of proposed extension</p> <ul style="list-style-type: none"> • Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended 	

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Identification No.	G1 (on neighbouring)
Species	Common holly <i>Ilex aquifolium</i>
Current Height (M)	9m
Ultimate Height (M)	9m
Current Stem Dia (cm) at 1.5m	18cm average for 6 stems
Crown clearance	3m
Crown Spread (M)	Radius: 1.5m
Growth stage	Mature
<p>Tree Condition: Root: no visual evidence of soil movement. Stem: crowns lifted over the garden. Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: Low Root Protection Area RPA: for tree of 18cm average diameter at 1.5m. 0.1944 $\sqrt{(0.18^2 \times 6) \times 12} = 5.2\text{m Radius.}$ Total RPA required at current stage of growth = 85m² Arboricultural Impact Assessment AIA: <ul style="list-style-type: none"> • No alteration of soil levels or new trench excavation is permitted within RPA • The proposed extension falls outside the RPA of G1. Method Statement: construction of proposed extension <ul style="list-style-type: none"> • Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended </p>	

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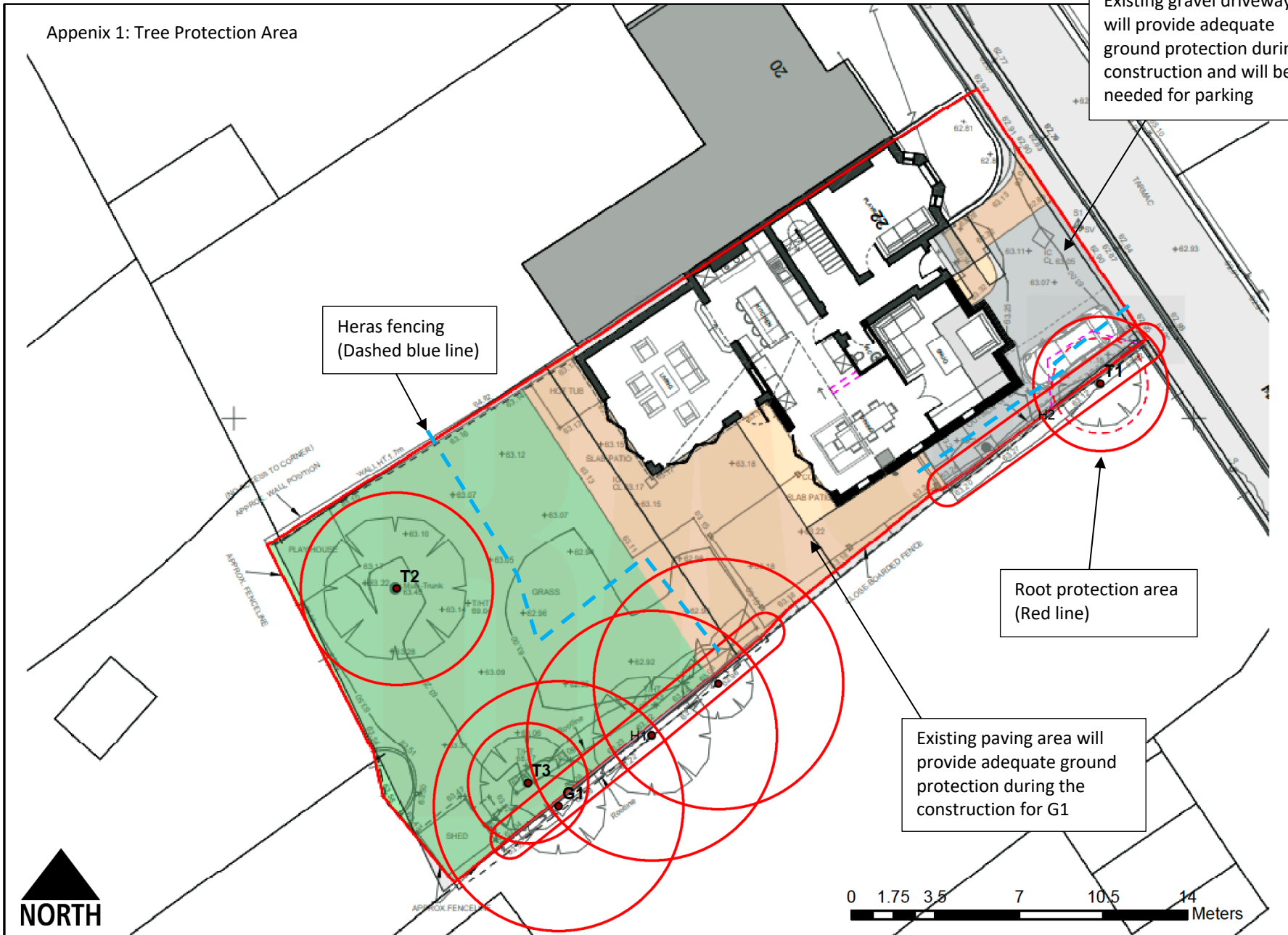
Identification No.	T3
Species	Viburnum
Current Height (M)	6m
Ultimate Height (M)	6m
Current Stem Dia (cm) at 1.5m	7cm average for 9 stems
Crown clearance	4m
Crown Spread (M)	Radius: 1.5m
Growth stage	Early mature
<p>Tree Condition: Root: no visual evidence of soil movement. Stem: wounds occluding. Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of average 7cm diameter at 1.5m $\sqrt{(0.07^2 \times 9) \times 12} = \mathbf{2.5m \text{ Radius}}$. Total RPA required at current stage of growth = 20m² Arboricultural Impact Assessment AIA: <ul style="list-style-type: none"> No alteration of soil levels or new trench excavation is permitted within RPA The proposed extension falls outside the RPA of T3 Method Statement: construction of proposed extension <ul style="list-style-type: none"> Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended. </p>	

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Identification No.	H1
Species	Elder <i>Sambuccas nigra</i>
Current Height (M)	2m
Ultimate Height (M)	2m
Current Stem Dia (cm) at 1.5m	7cm
Crown clearance	0m
Crown Spread (M)	Radius: 0.5m
Growth stage	Early mature
<p>Tree Condition: Root: no visual evidence of soil movement. Stem: multiple stems. Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of 7cm diameter at 1.5m (0.07 x 12) = 0.8m Radius. Total RPA required at current stage of growth = 2m² Arboricultural Impact Assessment AIA:</p> <ul style="list-style-type: none"> • No alteration of soil levels or new trench excavation is permitted within RPA • The proposed extension falls outside the RPA of H1 <p>Method Statement: construction of proposed extension</p> <ul style="list-style-type: none"> • Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended. 	

Identification No.	H2
Species	Beech <i>Fagus sylvatica</i>
Current Height (M)	1.5m
Ultimate Height (M)	1.5m Maintained at
Current Stem Dia (cm) at 1.5m	7cm
Crown clearance	0m
Crown Spread (M)	Radius: 0.5m
Growth stage	Early mature
<p>Tree Condition: Root: no visual evidence of soil movement. Stem: multiple stems. Crown: No evidence of recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: 'trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating'. Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of 7cm diameter at 1.5m (0.07 x 12) = 0.8m Radius. Total RPA required at current stage of growth = 2m² Arboricultural Impact Assessment AIA:</p> <ul style="list-style-type: none"> • No alteration of soil levels or new trench excavation is permitted within RPA • The proposed extension falls outside the RPA of H2 • Construction access may be required within the RPA <p>Method Statement: construction of proposed extension.</p> <ul style="list-style-type: none"> • Install section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended. • The existing driveway will provide adequate ground protection during the construction of the extension. Parking for the owners will still be required during the construction, as there is no parking available along the road side. 	

Appendix 1: Tree Protection Area

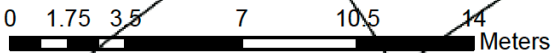


Heras fencing
(Dashed blue line)

Existing gravel driveway
will provide adequate
ground protection during
construction and will be
needed for parking

Root protection area
(Red line)

Existing paving area will
provide adequate ground
protection during the
construction for G1



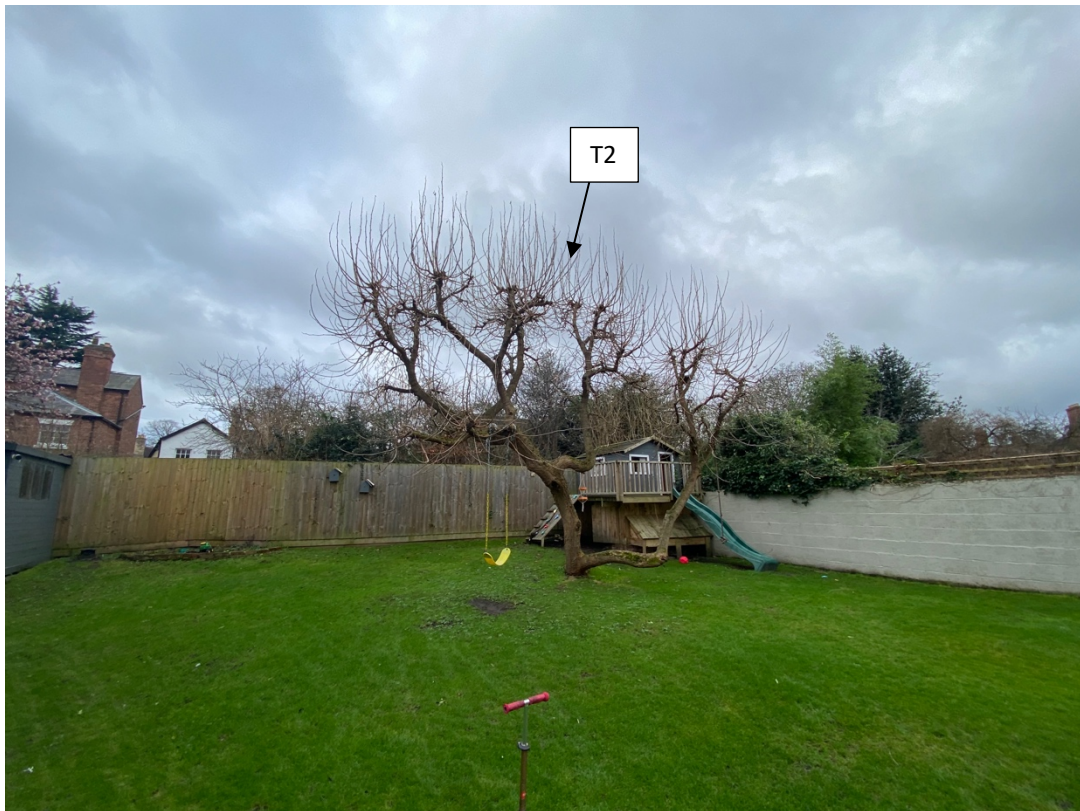
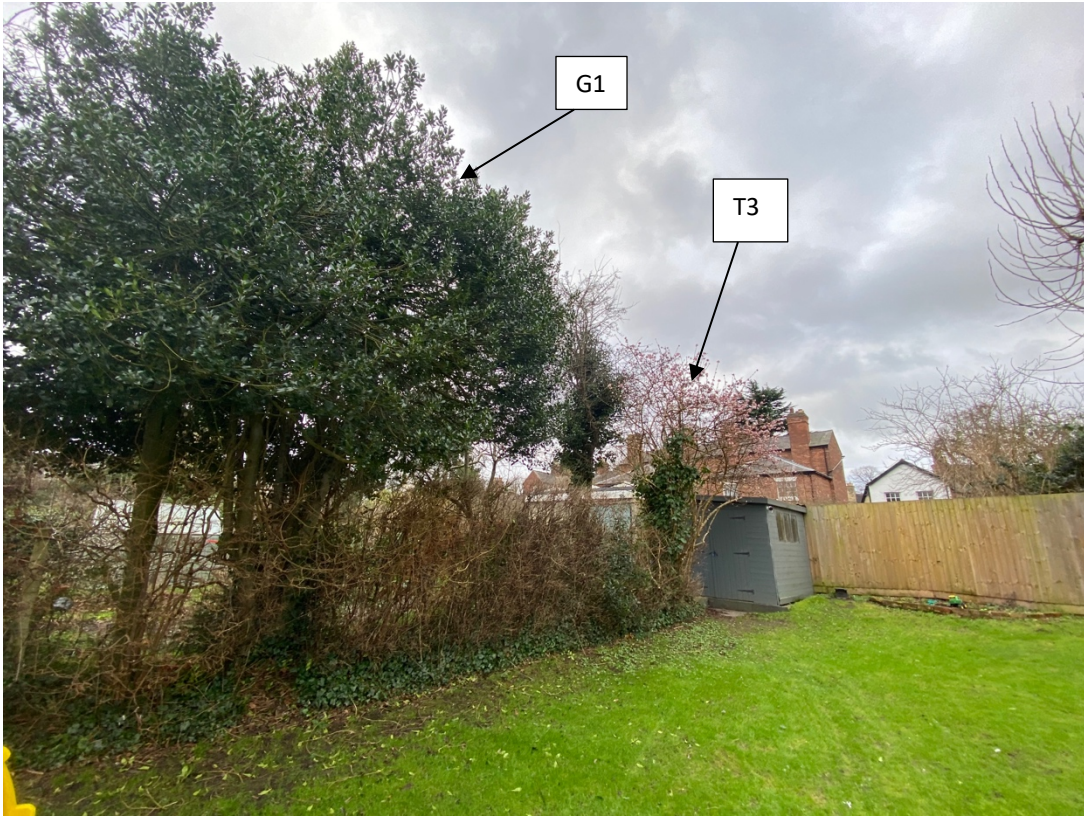
Appendix 2: Photo Detail



G1- on neighbouring property



T2



Paving area within G1 will provide adequate ground protection.





T1



H2

Existing driveway will provide ground protection during the construction. Vehicles will still require this for parking.

General Arboricultural Method Statement ref. BS 5837 (2012)

3.0 The root protection area (RPA) recommendation in BS 5837 2012 (Trees in relation to design, demolition and construction – Recommendations), is based upon a minimum area (in m²) calculated from the measurement of the stem diameter and a factor of the radial distance between the tree stem and the outer extent of the main lateral roots. The resulting area is usually recorded as a generalised circle on the tree survey. However the significant figure is the equivalent available rooting area in m² rather than the circular shape; tree roots ~~exploit~~ the optimum ground conditions for their physical development dependent upon soil aeration, plant-available water, mineral elements and physical barriers to growth. Providing the total minimum area in m² recommended in the RPA is available to the tree, the actual shape of the area is less significant, *providing* it can be demonstrated that the construction process will not result in significant damage to existing roots greater than 25mm in diameter. 'The viable retention of trees on construction sites is dictated by the successful protection of their root systems throughout the development process from initial site clearance to installation of the new landscape. Healthy soils contain five basic components: oxygen, organic matter, mineral matter, living organisms and moisture. A soil's porosity allows water to drain through, carbon dioxide to escape and oxygen to enter. Construction vehicles operating on exposed soils, particularly in wet conditions, compact the soil pores and prevent these processes from occurring' (Cowan 2005)

3.1 The Tree Protection Plan (TPP) and method statement details how the construction work will be carried out in proximity to the retained trees, protective barrier specification, timing of work, other mitigation measures where required and supervision of the protection measures during construction.

3.2 Summary of works

Drainage and Utilities: Follow recommendation in the NJUG Volume 4 Code of practice relating to work in proximity to tree roots within the RPA; specifically, the avoidance of trench excavations within the RPA. Any drainage or service related works to be carried out within the Root Protection Area must be subject to the prior written approval of the LPA of a method statement detailing how such works are to be carried out and monitored, so as to avoid undue damage to the tree.

Site Compound, construction materials, soil/demolition debris storage mixing of concrete and washings: Must be located outside of the Root Protection Areas. Vehicle movements, storage of vehicles or heavy machinery, lighting of fires and no excavations or alterations of ground level is permitted within the protective barrier or areas of temporary ground protection

Method of work for individual trees retained in proximity to construction works or access to the works: refer to the work method described for each retained tree ref. section 2.2 of the report.

3.3 Protective Fencing

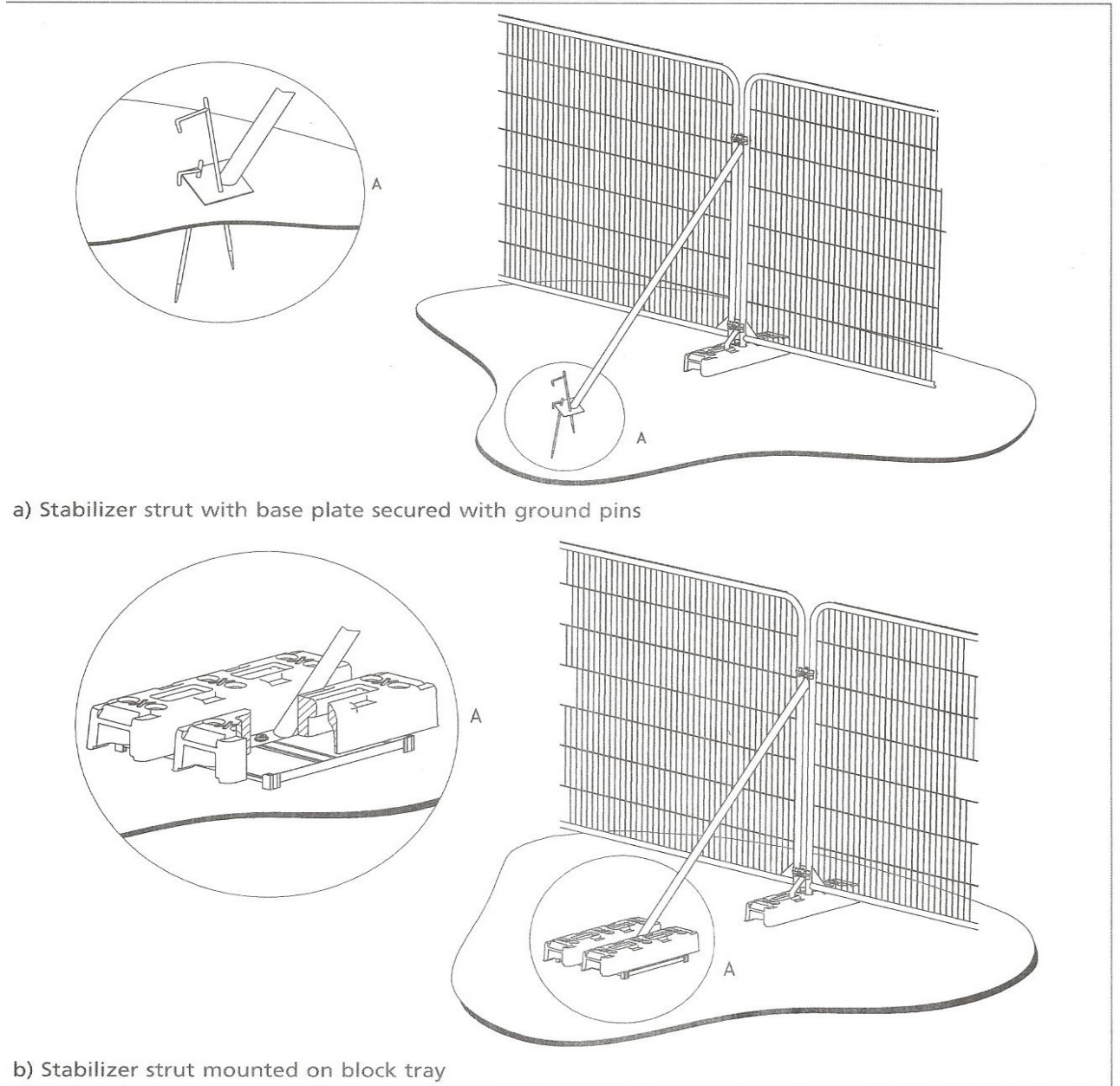
- Protective barriers should be erected with verticals positioned to avoid the lateral roots of the larger trees. Refer to BS 5837 (2012) figure 3 Protective barrier for details of the recommended specification.
- Protective barrier should be erected and then approved by the Local Planning Authority before the start of demolition and construction works on site, including the installation of temporary site office, storage and welfare facilities if required
- The barrier and ground protection shall be maintained in a satisfactory condition throughout the duration of development. There is to be no access or operations of any kind within the barrier, nor repositioning of the barrier even temporarily, without the prior written approval of the LPA.

Appendix 3

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



6.2.3 Ground protection during demolition and construction

6.2.3.2 Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- 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 (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
- b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;
- c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see 6.1).

6.2.3.5 In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

6.2.4 Additional precautions outside the exclusion zone

6.2.4.1 Planning of site operations should take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweights (including drilling rigs), in order that they can operate without coming into contact with retained trees. Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity to trees should be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is maintained at all times. Access facilitation pruning should be undertaken where necessary to maintain this clearance.

NOTE In some instances, local planning authority consent for pruning might be required.

6.2.4.2 Fires on sites should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times until safe enough to leave.

NOTE Local environmental health authorities might have specific restrictions.

6.2.4.3 Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

Glossary of Arboricultural Terms

Adaptive Growth: Woundwood.	New strengthening woody growth in response to loss of tissue through decay or physical damage
Age Class: Young	Up to 1/3 rd life expectancy
Early-mature	Between 1/3 rd and 2/3rds life expectancy
Mature	Over 2/3rds life expectancy
Late-mature	Onset of natural limb loss; increase in dysfunctional tissue
Over-mature	Declining or moribund trees of low vigour. NB Late-mature and over-mature trees are more prone to structural failure than young or early-mature trees.
Breakout:	Loss of a limb usually close to the junction the main stem or scaffold limb
Branch bark ridge:	Natural feature in the axil of the branch providing a simple guide for locating the best position for the top edge of a pruning cut.
Buttressing:	Root flare at the base of the stem
Crown dieback:	Significant loss of foliage throughout the crown; often the result of root damage. Usually indicating a tree in decline.
Deadwood:	Dead secondary branching persisting on the scaffold limbs. Minor deadwood <50mm diameter is less likely to cause damage in the event of failure. Major deadwood >50mm present a greater hazard and is a greater risk of failure in trees without durable heartwood e.g. Lime and ash. Deadwood which is not presenting a hazard to the highway is excluded from the inspection report. Deadwood stubs: Prevent the sealing of the wound site, providing sites of decay and increasing risk of limb failure.
Epicormic Response:	Growth of dormant buds on areas of the stem or scaffold limbs effected by loss of woody tissue or foliage. New woody tissue is laid down in areas of vigorous epicormic growth.
Included bark:	Weak regions of bark-to-bark contact at the stem or branch junctions.
Retrenchment:	Describes the response in new growth in the lower crown, following dieback in the upper crown. A feature of some over-mature trees, enabling survival into great age (veteran trees)
Scaffold limbs:	1 st order limbs; the major limbs supporting the secondary branching or 2 nd & 3 rd order branches
Soil Heave:	Raised lateral roots or loosened soil surrounding the base of the tree.

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Date: 30th January 2024