

**Tree Condition Report
Arboricultural Impact Assessment
Arboricultural Method Statement
Tree Protection Plan**

**Land at The Sheepfold Farm, Bronington,
Near Whitchurch**



For

Farm Adventure Ltd

23.11.2020

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Appendix 1

Photo Detail: Tree condition illustration ref. Sect 2.2

Appendix 2

Tree Location and Protection Plan Drawings

Appendix 3

BS 5837 2012 Protection illustrations x2

BS 5837 (2005) Protection illustrations x1

Appendix 4

Appendix 4 Glossary of Arboricultural Terms

- 1.0 **Remit:** Inspect the condition of trees within and adjacent to the proposed development based upon the site drawing supplied by the Client. Provide 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 tree condition 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 incidental.

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, wilful 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: The Sheepfold Farm, Ellesmere Road, Bronington, Whitchurch, SY13 3HD

Inspection Date: 11.11.2020

Protection Status: Unknown at the time of the 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.

Identification No.	T1 (Growing in neighbouring field)
Species	English oak <i>Quercus Robur</i>
Current Height (M)	20m
Ultimate Height (M)	20m
Current Stem Dia (cm) at 1.5m	70cm (estimated)
Crown clearance (M)	5m
Crown Spread (M)	Radius: 6m on the development side
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: ivy is obscuring stem so defects are not visible. Crown: No recent breakouts or dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in street scene. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 70cm diameter at 1.5m $(0.7 \times 12) = 8.4\text{m Radius}$ Total RPA required at current stage of growth = 222m² Arboricultural Impact Assessment AIA: • Less than 10% of the total RPA will be covered by the proposed WC Block. • The proposed new WC block footprint falls within the RPA • No new trench excavation or change in soil level is permitted within the RPA • No alteration of soil levels is permitted within the RPA of T1 Method Statement for the construction of the proposed WC Block . • Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended. • The WC Block will be installed on an above ground base, which will rest on small concrete pads. The pads within the RPA will be dug by hand to avoid severing any major tree roots (greater than 25mm diameter). The holes must be sheathed with a polypropylene liner. This will avoid alkaloids leaching out into the soil and burning tree roots. • The above ground base used will be supported by something similar to Swift Plinth supports, as seen on their website; https://swiftfoundations.co.uk/swift-foundation-raft/. These will be supported by the small concrete pads. • No wheeled vehicles are permitted to enter the RPA without laying out temporary ground protection.	

Identification No.	T2 (Growing in neighbouring field)
Species	English oak <i>Quercus robur</i>
Current Height (M)	18m
Ultimate Height (M)	18m
Current Stem Dia (cm) at 1.5m	40cm
Crown clearance (M)	4m
Crown Spread (M)	Radius: 6m (on the development side)
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: ivy is obscuring the stem, so thorough visual inspection cannot be made. Crown: No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in the landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 40cm diameter at 1.5m (0.4×12) = 4.8m Radius Total RPA required at current stage of growth = 72m² Arboricultural Impact Assessment AIA: - Approximately 10% of the total RPA will be covered by the proposed WC Block. - The proposed new WC Block footprint falls within the RPA - No new trench excavation or change in soil level is permitted within the RPA - No alteration of soil levels is permitted within the RPA of T2 Method Statement for the construction of the proposed WC Block. - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended. - The WC Block will be installed on an above ground base, which will rest on small concrete pads. The pads within the RPA will be dug by hand to avoid severing any major tree roots (greater than 25mm diameter). The holes must be sheathed with a polypropylene liner. This will avoid alkaloids leaching out into the soil and burning tree roots. - The above ground base of the block will sit on or something similar to the Swift plinth system, as shown in this link: https://swiftfoundations.co.uk/swift-foundation-raft/. - No wheeled vehicles are permitted to enter the RPA without laying out temporary ground protection	

Identification No.	T3 (growing in neighbouring field)
Species	English oak <i>Quercus robur</i>
Current Height (M)	18m
Ultimate Height (M)	18m
Current Stem Dia (cm) at 1.5m	45cm
Crown clearance (M)	4m south side
Crown Spread (M)	Radius: 6m (on development side)
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: no evidence of fungi or bark necrosis. Crown: Asymmetric development over the development side which needs reducing, as it is at risk of failure over the development side. No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 45cm diameter at 1.5m (0.45×12) = 5.4m Radius Total RPA required at current stage of growth = 92m² Arboricultural Impact Assessment AIA: - The WC Block will fall outside the RPA of T3 - No alteration of soil levels are permitted within the RPA of T3 - No trench excavation is permitted within the RPA of T3 Method Statement: Installation of proposed WC Block - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended	

Identification No.	T4 Growing in neighbouring field
Species	English oak <i>Quercus robur</i>
Current Height (M)	18m
Ultimate Height (M)	18m
Current Stem Dia (cm) at 1.5m	35cm
Crown clearance (M)	4m
Crown Spread (M)	Radius:6m (on the development side)
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: No evidence of fungi fruiting bodies or bark necrosis Crown: No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 35cm diameter at 1.5m (0.35×12) = 4.2m Radius Total RPA required at current stage of growth = 55m² Arboricultural Impact Assessment AIA: - The WC Block falls outside the RPA of T4 - No alteration of soil levels are permitted within the RPA. - No new trench excavation or change in soil level is permitted within the RPA Method Statement: Installation of WC Block - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended	

Identification No.	T5 (Growing in neighbouring field)
Species	Silver birch <i>Betula pendula</i>
Current Height (M)	22m
Ultimate Height (M)	22m
Current Stem Dia (cm) at 1.5m	30cm
Crown clearance (M)	4m
Crown Spread (M)	Radius: 4m (on the development side)
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: No evidence of fungi fruiting bodies or bark necrosis Crown: No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of 30cm diameter at 1.5m (0.3×12) = 3.6m. Radius Total RPA required at current stage of growth = 41m^2 Arboricultural Impact Assessment AIA: - The footprint of the proposed WC Block falls outside the RPA of T5 - No alteration of soil levels are permitted within the RPA of T5 - No new trench excavation or change in soil level is permitted within the RPA Method Statement: (Construction of proposed WC Block) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended	

Identification No.	T6 (growing on neighbouring field)
Species	English oak <i>Quercus robur</i>
Current Height (M)	17m
Ultimate Height (M)	17m
Current Stem Dia (cm) at 1.5m	65cm
Crown clearance (M)	5m
Crown Spread (M)	Radius: 5m
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: wounds occluded. Crown: No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 65cm diameter at 1.5m (0.65×12) = 7.8m. Radius Total RPA required at current stage of growth = 191m^2 Arboricultural Impact Assessment AIA: - The WC Block falls outside the RPA of T6 - No new trench excavation or change in soil level is permitted within the RPA - No alteration of soil levels are permitted within the RPA of T6 Method Statement: (Construction of WC Block) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended	

Identification No.	T7 (growing in neighbouring field)
Species	English oak <i>Quercus robur</i>
Current Height (M)	20m
Ultimate Height (M)	20m
Current Stem Dia (cm) at 1.5m	60cm
Crown clearance (M)	3m
Crown Spread (M)	Radius: 7m on the development side
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: No evidence of fungi fruiting bodies or bark necrosis Crown: No recent breakouts or significant dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in street scene. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 60cm diameter at 1.5m (0.60×12) = 7.2m. Radius Total RPA required at current stage of growth = 163m² Arboricultural Impact Assessment AIA: - The footprint of the proposed car park falls within the RPA of T7. This covers approximately 10% of the RPA. - No new trench excavation or change in soil level is permitted within the RPA - No trench excavation is permitted within the RPA. Method Statement: (Construction of new carpark) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended - the RPA. - The tree is in good vitality and vigour and is likely to be able to adapt to the short term change in soil hydrology which the proposed carpark will cause. - There is adequate compensatory rooting space available in the neighbouring field. - The British Standard only permits the removal of turf, so mineral soil will remain undisturbed. - Install section of above ground cellular confinement system within the RPA to form the car parking area closest to the tree, within the RPA. - Ramping on and off the above-ground CCS section must be constructed using cellular grid which are infilled with stone, levelled to form the sloping ramp and surfaced with porous tarmac or stone. - The CCS should be designed by an engineer to carry the maximum anticipated loading for site construction traffic and future use - The CCS must be constructed before vehicles cross the RPA using the 'rolling out' system of installation. - The permeable surface within the RPA and compensatory area should be protected with a temporary sacrificial surface laid over a geotextile separator to ensure permeability is retained (i.e. interstices should not become blocked by the passage of construction vehicles). No excavation for haunching is permitted on side of the CCS closest to the tree/s within the RPA. The CCS edge must be supported e.g. by above-ground retaining boards/blocks secured with road pins to minimise damage to the lateral roots.	

Identification No.	T8
Species	English oak <i>Quercus robur</i>
Current Height (M)	18m
Ultimate Height (M)	18m
Current Stem Dia (cm) at 1.5m	40cm
Crown clearance (M)	5m
Crown Spread (M)	Radius: 5m on the development side
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: no evidence of bark necrosis. Wounds at base of the stem, case hardened. Crown: No recent breakouts or significant dieback. major deadwood over the field. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 40cm diameter at 1.5m $(0.4 \times 12) = 4.8\text{m}$. Radius Total RPA required at current stage of growth = 72m^2 Arboricultural Impact Assessment AIA: - The footprint of the proposed car park falls within the RPA of T8. This covers approximately 10% of the RPA. - No new trench excavation or change in soil level is permitted within the RPA - No trench excavation is permitted within the RPA. Method Statement: (Construction of new carpark) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended the RPA. - The tree is in good vitality and vigour and is likely to be able to adapt to the short term change in soil hydrology which the proposed carpark will cause. - There is adequate compensatory rooting space available in the neighbouring field. - The British Standard only permits the removal of turf, so mineral soil will remain undisturbed. - Install section of above ground cellular confinement system within the RPA to form the car parking area closest to the tree, within the RPA. - Ramping on and off the above-ground CCS section must be constructed using cellular grid which are infilled with stone, levelled to form the sloping ramp and surfaced with porous tarmac or stone. - The CCS should be designed by an engineer to carry the maximum anticipated loading for site construction traffic and future use - The CCS must be constructed before vehicles cross the RPA using the 'rolling out' system of installation. - The permeable surface within the RPA and compensatory area should be protected with a temporary sacrificial surface laid over a geotextile separator to ensure permeability is retained (i.e. interstices should not become blocked by the passage of construction vehicles). No excavation for haunching is permitted on side of the CCS closest to the tree/s within the RPA. The CCS edge must be supported e.g. by above-ground retaining boards/blocks secured with road pins to minimise damage to the lateral	

Identification No.	T9
Species	English oak <i>Quercus robur</i>
Current Height (M)	15m
Ultimate Height (M)	15m
Current Stem Dia (cm) at 1.5m	55cm
Crown clearance (M)	6m
Crown Spread (M)	Radius: 4m on the development side
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: epicormic growth. Crown: No recent breakouts or dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40year Water Demand NHBC 4.2-B: high Root Protection Area RPA: for tree of 55cm diameter at 1.5m (0.55 x 12) = 6.6m. Radius Total RPA required at current stage of growth = 137m² Arboricultural Impact Assessment AIA: - The footprint of the proposed car park falls within the RPA of T9. This covers approximately 10% of the RPA. - No new trench excavation or change in soil level is permitted within the RPA - No trench excavation is permitted within the RPA. Method Statement: (Construction of new carpark) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended the RPA. - The tree is in good vitality and vigour and is likely to be able to adapt to the short term change in soil hydrology which the proposed carpark will cause. - There is adequate compensatory rooting space available in the neighbouring field. - The British Standard only permits the removal of turf, so mineral soil will remain undisturbed. - Install section of above ground cellular confinement system within the RPA to form the car parking area closest to the tree, within the RPA. - Ramping on and off the above-ground CCS section must be constructed using cellular grid which are infilled with stone, levelled to form the sloping ramp and surfaced with porous tarmac or stone. - The CCS should be designed by an engineer to carry the maximum anticipated loading for site construction traffic and future use - The CCS must be constructed before vehicles cross the RPA using the 'rolling out' system of installation. - The permeable surface within the RPA and compensatory area should be protected with a temporary sacrificial surface laid over a geotextile separator to ensure permeability is retained (i.e. interstices should not become blocked by the passage of construction vehicles). No excavation for haunching is permitted on side of the CCS closest to the tree/s within the RPA. The CCS edge must be supported e.g. by above-ground retaining boards/blocks secured with road pins to minimise damage to the lateral	

Identification No.	T10
Species	English oak <i>Quercus robur</i>
Current Height (M)	14m
Ultimate Height (M)	14m
Current Stem Dia (cm) at 1m	70cm
Crown clearance (M)	5m
Crown Spread (M)	Radius: 5m on the development side
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: ivy is obscuring the stem, thorough visual inspection of the stem could not be made. Crown: No recent breakouts or dieback. Major deadwood within the crown. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: High Root Protection Area RPA: for tree of 70cm diameter at 1m $(0.70 \times 12) = 8.4\text{m}$. Radius Total RPA required at current stage of growth = 222m^2 Arboricultural Impact Assessment AIA: - The footprint of the proposed car park falls within the RPA of T10. This covers approximately 20% of the RPA. - No new trench excavation or change in soil level is permitted within the RPA - No trench excavation is permitted within the RPA. Method Statement: (for the construction of the proposed carpark) - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended the RPA. - The tree is in good vitality and vigour and is likely to be able to adapt to the short term change in soil hydrology which the proposed carpark will cause. - There is adequate compensatory rooting space available in the adjacent verge. - The British Standard only permits the removal of turf, so mineral soil will remain undisturbed. - Install section of above ground cellular confinement system within the RPA to form the car parking area closest to the tree, within the RPA. - Ramping on and off the above-ground CCS section must be constructed using cellular grid which are infilled with stone, levelled to form the sloping ramp and surfaced with porous tarmac or stone. - The CCS should be designed by an engineer to carry the maximum anticipated loading for site construction traffic and future use - The CCS must be constructed before vehicles cross the RPA using the 'rolling out' system of installation. - The permeable surface within the RPA and compensatory area should be protected with a temporary sacrificial surface laid over a geotextile separator to ensure permeability is retained (i.e. interstices should not become blocked by the passage of construction vehicles). No excavation for haunching is permitted on side of the CCS closest to the tree/s within the RPA. The CCS edge must be supported e.g. by above-ground retaining boards/blocks secured with road pins to minimise damage to the lateral	

Identification No.	T11
Species	English oak <i>Quercus robur</i>
Current Height (M)	13m
Ultimate Height (M)	13m
Current Stem Dia (cm) at 1m	30cm and 25cm
Crown clearance (M)	3m
Crown Spread (M)	Radius: 5m
Growth stage	Mature
Tree Condition: Root: No evidence of soil movement. Stem: no evidence of bark necrosis. Crown: No recent breakouts or dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of 23cm diameter at 1m $(0.23 \times 12) = 2.8\text{m}$. Radius Total RPA required at current stage of growth = 24m^2 Arboricultural Impact Assessment AIA: - The proposed car parking area and updated tarmac road falls outside the RPA of T11 - No trench excavation is permitted within the RPA of T11 - No alteration of soil levels is permitted within the RPA of T11 Method Statement: for the construction of the proposed carpark - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended the RPA.	

Identification No.	G1
Species	Ash, silver birch, small leaved lime and hawthorn
Current Height (M)	6m
Ultimate Height (M)	6m
Current Stem Dia (cm) at 1m	20cm maximum for group
Crown clearance (M)	1.5m
Crown Spread (M)	Radius: 1.5m
Growth stage	Young
Tree Condition: Root: No evidence of soil movement. Stem: no evidence of bark necrosis. Crown: No recent breakouts or dieback. Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category A2 Significant tree in landscape. Life expectancy > 40years Water Demand NHBC 4.2-B: Moderate Root Protection Area RPA: for tree of 20cm diameter at 1m $(0.2 \times 12) = 2\text{m}$. Radius Total RPA required at current stage of growth = 18m^2 Arboricultural Impact Assessment AIA: - The footprint of the proposed WC Block, carpark and sewage treatment works falls outside the RPA of G1 - No trench excavation is permitted within the RPA - No alteration of soil levels are permitted within the RPA Method Statement: for the construction of the proposed carpark and WC Block - Install the section of Heras fence barrier, positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig 3 appended the RPA. - The north side of the RPA of G1 is protected by existing fencing	

H1:

Condition: 30m of managed hawthorn and elder hedge, forming a 3m high screen. No evidence of recent breakout or significant dieback.

Tree Quality Assessment: Ref.BS5837 (2012) 4.5.1 Category B2: trees occurring as collectives but situated so as to make little visual contribution to the wider locality. Water Demand NHBC 4.2-B: high

Root Protection Area RPA: for average tree of maximum 25cm diameter at narrowest point below fork $(0.25 \times 12) = 3\text{m}$ radius.

Total RPA required at current growth stage = 28m²

Arboricultural Impact Assessment AIA:

- The proposed carpark and WC block fall just outside the RPA of H1
- No trench excavation permitted within the RPA
- No raising or lowering of soil levels within the RPA

Method Statement: construction of carpark and WC block

- Install the section of Heras fence barrier positioned as indicated on the tree protection plan. Specification as recommended in BS5837 (2012) fig.3 appended
- The WC block will be installed on an above ground base, which will be supported by a Swift plinth system, or similar. These will sit on small concrete pads. The pads within the RPA's will be dug by hand to avoid severing any major tree roots (greater than 25mm diameter). The holes must be sheathed with a polypropylene liner. This will avoid alkaloids leaching out into the soil and burning tree roots.
- No wheeled vehicles are permitted to enter the RPA without laying out temporary ground protection.

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

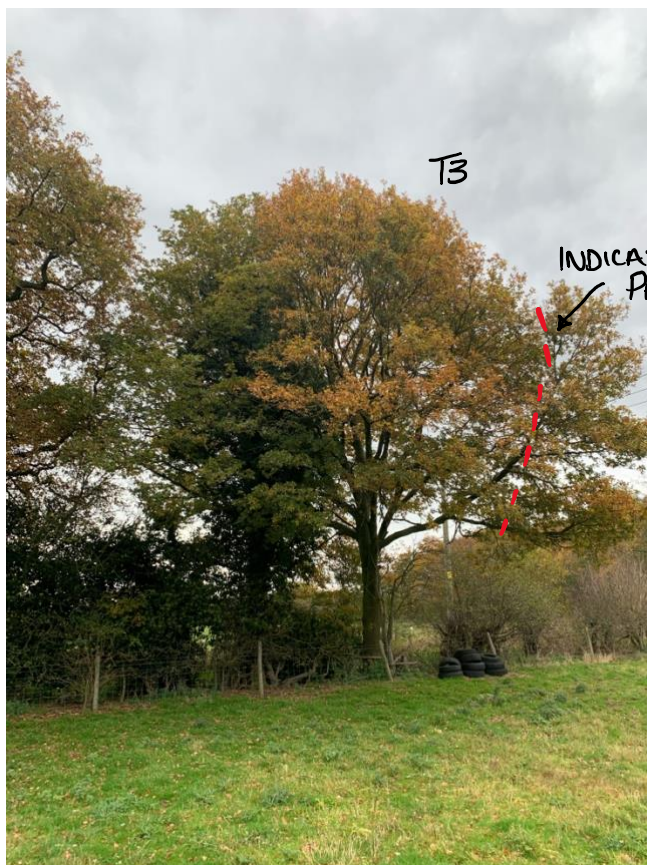
- Protective barriers should be erected with verticals positioned to avoid the lateral roots of the larger trees. Refer to BS 5837 (2012) figure 3 Protective barrier for details of the recommended specification.
- The barrier and ground protection shall be maintained in a satisfactory condition throughout 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.
- The inclusion of all-weather notices to be attached to every third panel of the tree protection fence stating that the fence is a tree protection fence and the zone beyond it is a construction exclusion zone.

3.4 Arboricultural Supervision

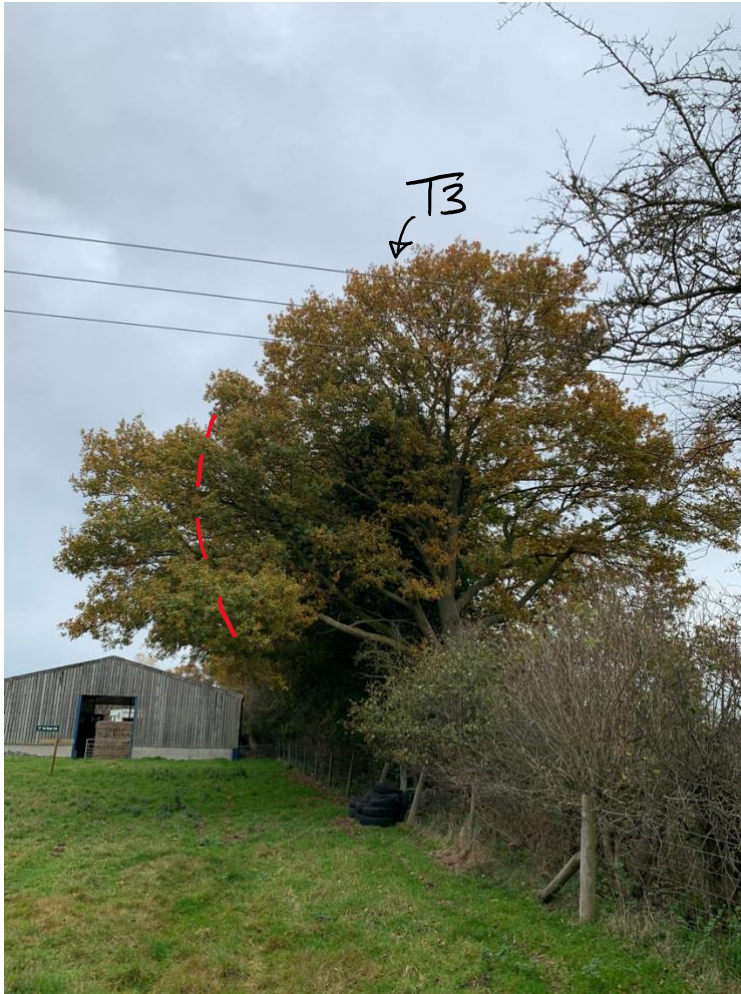
- The person responsible for day to day supervision will be the Construction site manager/foreman (named)
 - The Arboricultural Consultant (to be appointed) role will be:
1. Pre-commencement site meeting with foreman/manager and site owner to discuss the practical impact of the method statement and mark out position of protective fencing/ground protection
 2. 2nd visit as soon as fencing is in place and **before ground works have started** for photo evidence.
 3. 3rd visit unannounced to check on protective measures in place and method statement followed.
 4. Final visit on completion of works for photo evidence

Appendix 1

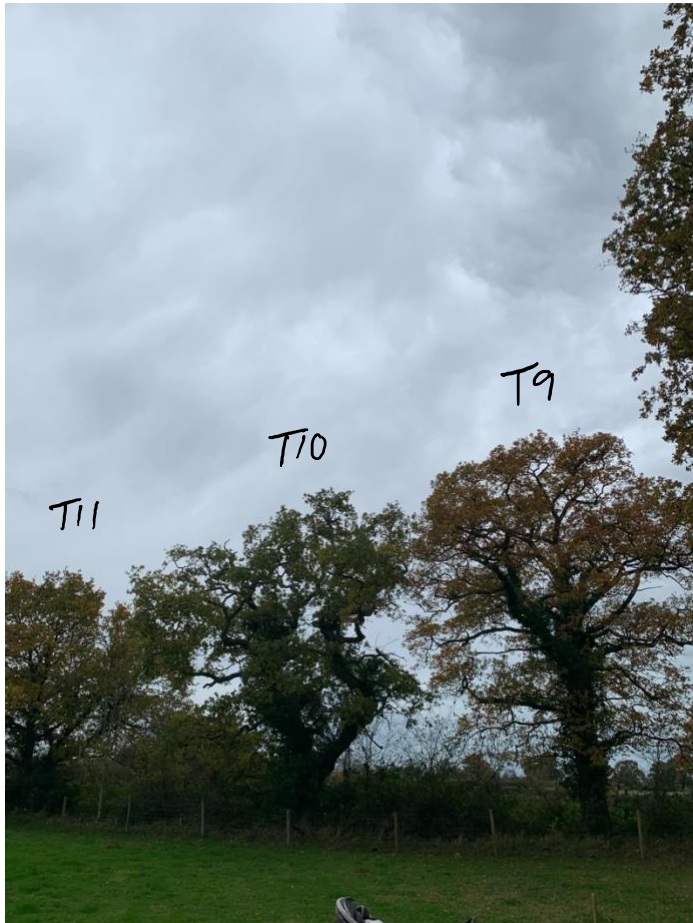
Photo Detail: Tree condition illustration ref. Sect 2.2



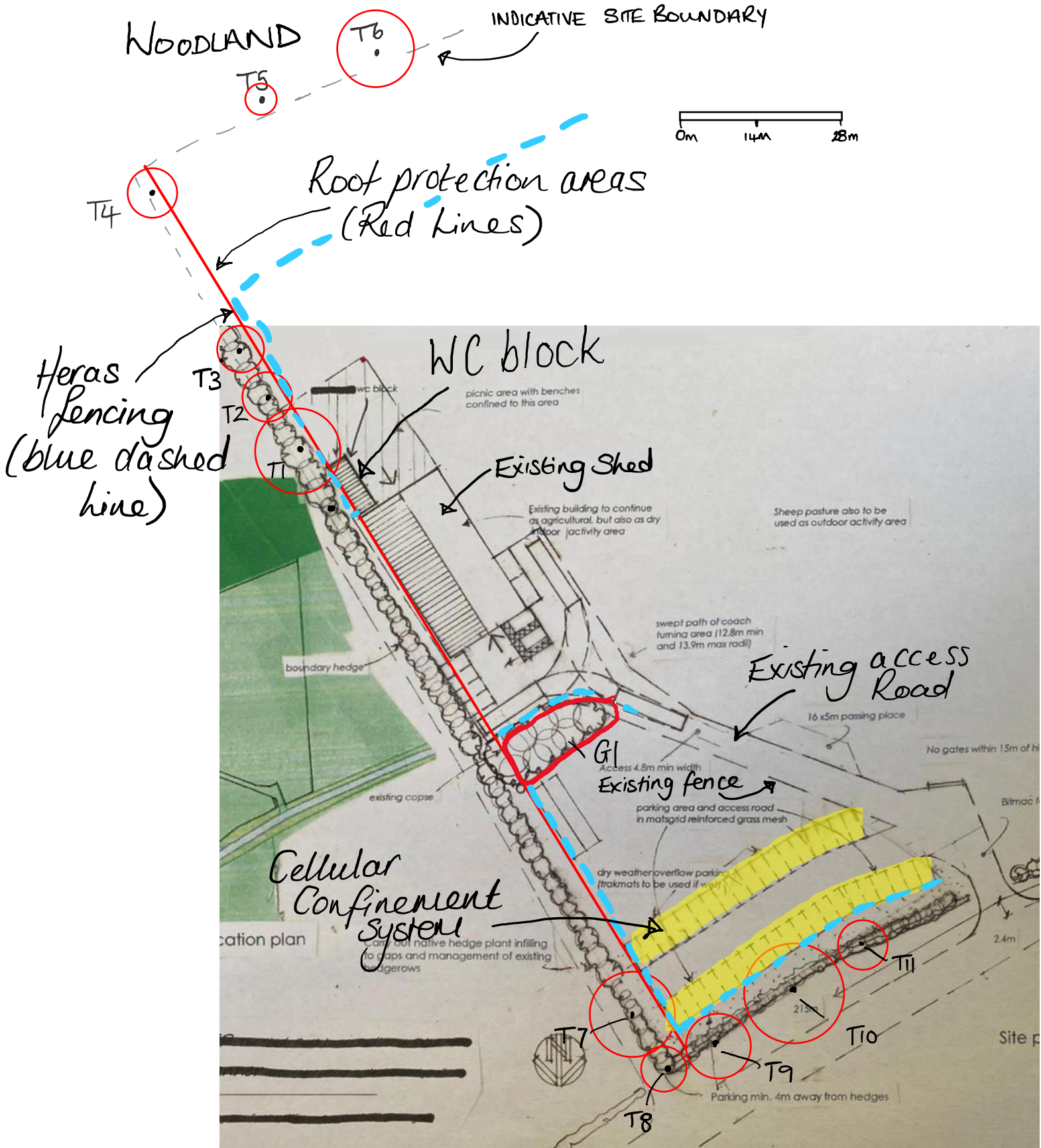
INDICATIVE
PRUNING
POSITION







Tree Protection Plan- The Sheepfold Farm, Bronington



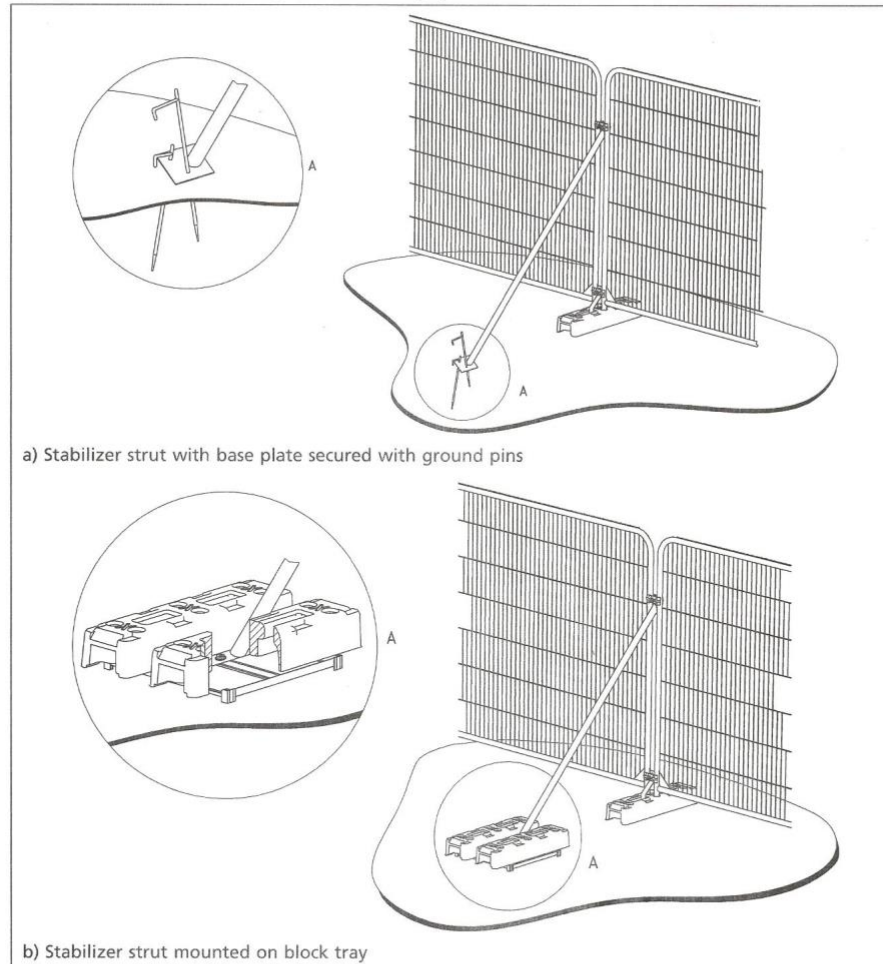
Appendix 3

BS 5837 2012 Protection illustrations

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

BS 5837:2012

BRITISH STANDARD

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.

BS 5837:2005

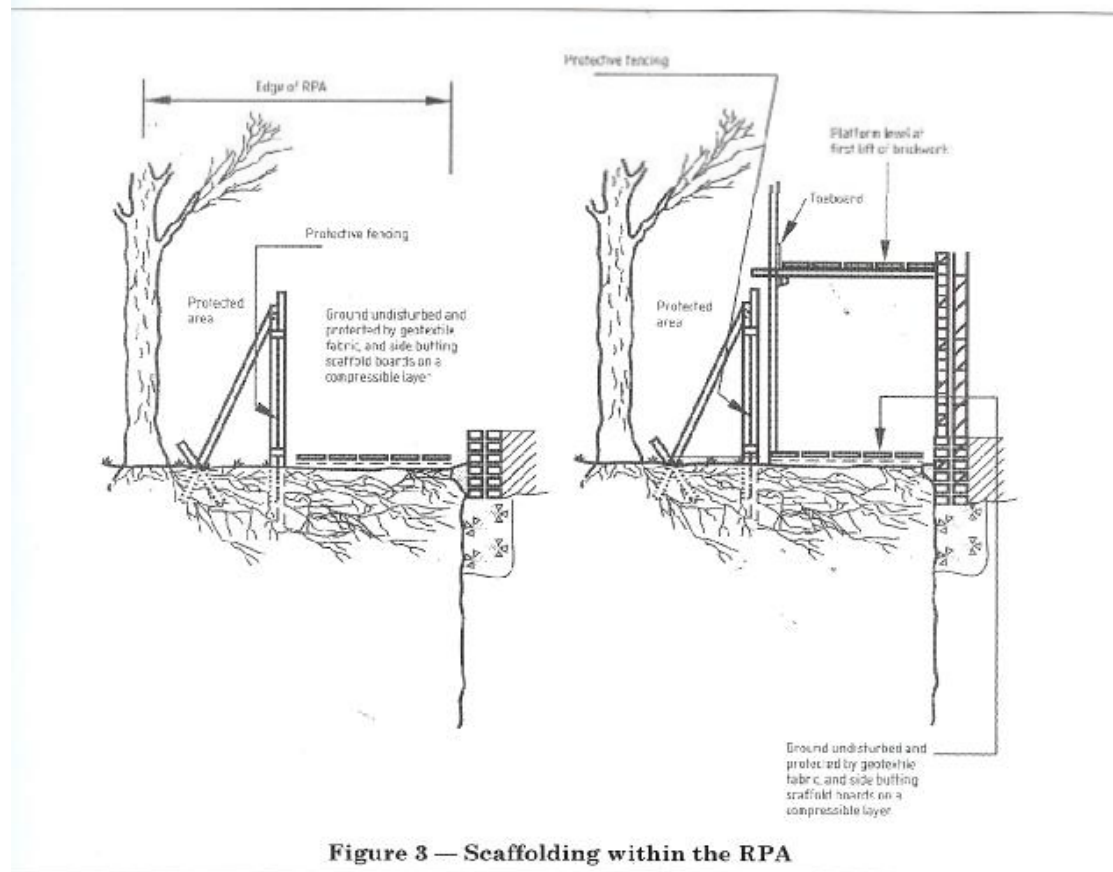


Figure 3 — Scaffolding within the RPA

4.4 Additional precautions outside the exclusion zone

4.4.1 Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices should be erected on the barrier with words such as:

"Construction exclusion zone — Keep out".

4.4.2 In addition the following should be addressed or avoided.

- Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus necessitating access facilitation pruning (see 11.2.1).
- Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.
- Fires should not be lit in a position where their flames can extend to within 5 m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.
- Notice boards, telephone cables or other services should not be attached to any part of the tree.

Appendix 4

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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