

CANMOOR

RHODES BUSINESS PARK, MIDDLETON

ARBORICULTURAL METHOD STATEMENT
TO BS 5837:2012



our ref:	2506 / EH / AMS001
date:	27 th January 2025
prepared by:	E.C.H
checked by:	T.G-W

our ref: 2506/EH/AMS001

project: Rhodes Business Park, Middleton

date: 27/01/2025

1.0 Context

- 1.1 The works included within this arboricultural method statement are part of the proposed redevelopment of the site for a light industrial unit on behalf of Canmoor as described within the Design & Access Statement.
- 1.2 As part of the planning application a tree survey was carried out for the area affected by the works by Tyler Grange (refer to TG Report No. 16200_R02_WS_LB). The tree survey includes the Tree Constraints Plan which identifies the root protection areas of the surveyed trees.
- 1.3 The Arboricultural Impact Assessment (refer to TG Report No. 16200_R02_WS_LB) identifies those trees to be removed and those to be retained (refer to the Retention & Removal Plan) including the need for special construction techniques required to mitigate for the proposed development.
- 1.4 This method statement refers to the protection of those trees in proximity of the works to be retained as part of the proposals G01, G06 and G07 and provides details of the special construction techniques outlined within the Arboricultural Impact Assessment.

2.0 Tree Protection Informative:

- 2.1 Trees that are in good health have grown and adapted to their surroundings. Any building works or construction activity which affects their surrounding could affect their vigour, future growth and safety.
- 2.2 The tree root system is the most susceptible to damage and can affect the health, growth, life expectancy and safety of the tree. Damage to the trunk and branches of a tree is not usually sufficient to kill the tree, but it can affect the shape and growth potentially making a tree unsafe.
- 2.3 Tree roots are typically concentrated within the uppermost 600mm of the existing ground level and form a network of small diameter woody roots (typically less than 1cm or pencil thickness) with mass of finer roots. These tree roots can extend for a distance much greater than the height and spread of the tree, except where prevented by unfavourable surroundings or obstructions. These fine roots are essential for the continued health and vitality of the tree and are dependent on the existing soil conditions being maintained.
- 2.4 All parts of the root system, but especially the fine roots, are vulnerable to damage from uncontrolled activities. It is also known that mature trees recover slowly, if at all, from damage to their roots, whilst younger trees with good vitality do have a chance to adapt.

3.0 Protected Species

- 3.1 Prior to any tree works, the trees to be removed and their surroundings are to be assessed for the presence of any protected species by a qualified ecologist and the timing of works should be optimised to avoid any negative impact on wildlife.
- 3.2 In accordance with the Wildlife and Countryside Act 1981 (as amended) all works to existing vegetation, particularly woody vegetation, hedges and trees including site clearance, tree removals, tree surgery or pruning must be carried out outside of the bird-breeding season (March - September inclusive). If this is not practicable, a qualified ecologist must inspect the vegetation to be removed or pruned for the presence of nesting birds prior to the carrying out of the works.

4.0 Construction Proposals

- 4.1 The construction of a new light industrial Unit including service yard, car parking, security fencing and soft landscaping.

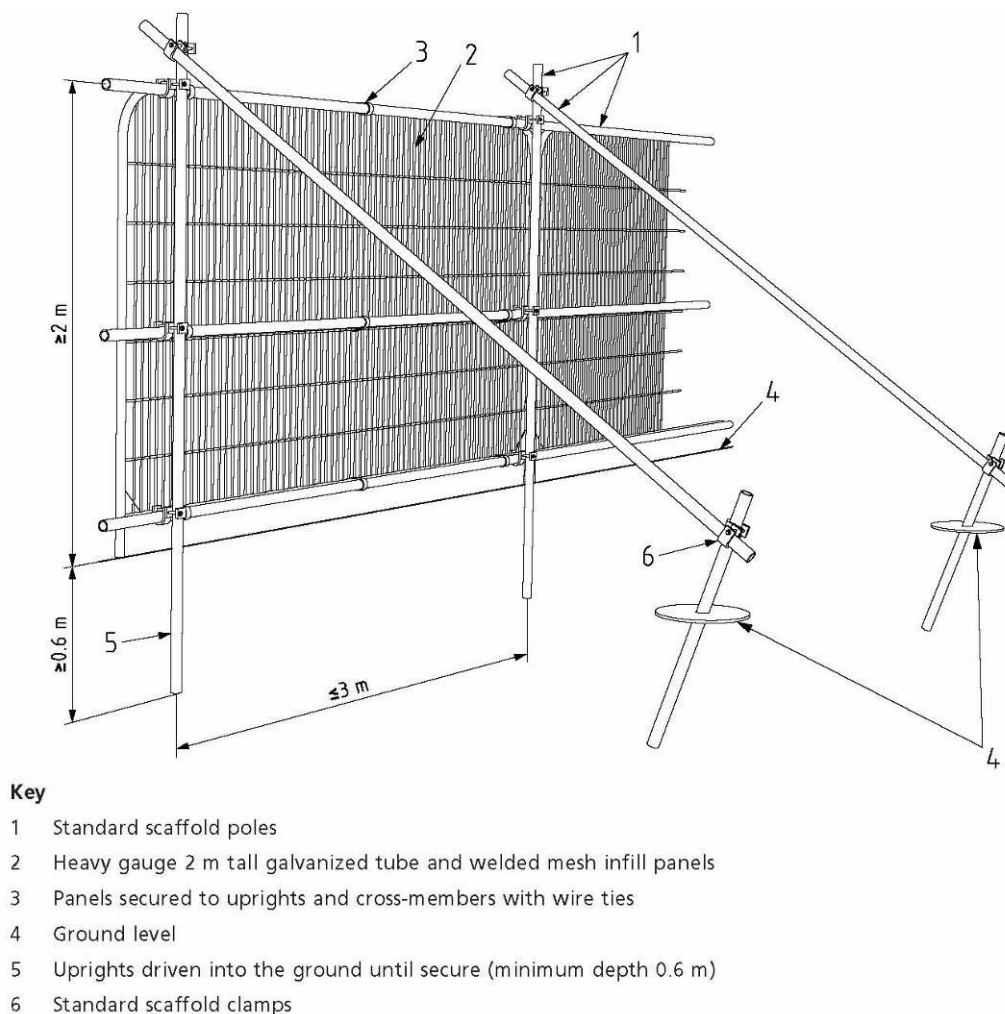
5.0 Tree Protection & Ground Protection

- 5.1 All trees that are being retained on site are to be protected by barriers and/or ground protection prior to any site activity and before any materials or machinery are brought onto the site, before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers are to be erected to create a construction exclusion zone. The default barrier specification is to be in accordance with Figure 2. of BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' as illustrated below and identified within the Tree Protection Plans BEA 25-006-01.



- 5.2 The protected area is to be regarded as sacrosanct, and, once installed, barriers and ground protection is not to be removed or altered without prior recommendation by the project arboriculturalist and, where necessary, approval from the local planning authority.

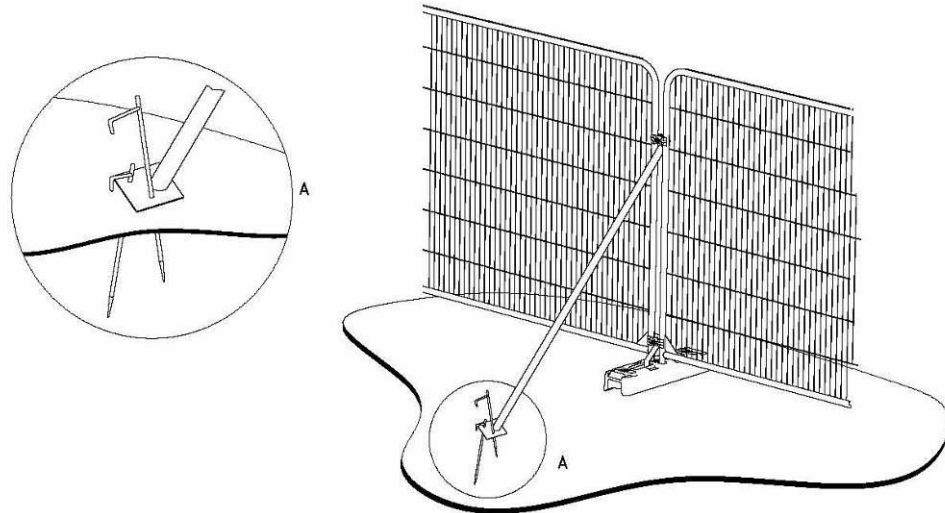
- 5.3 Trees are not to be used as anchorages for equipment, or for other purposes. Notice boards, telephone cables, or other services should not be attached to any part of the tree.
- 5.4 The dumping of spoil or rubbish, placing of temporary accommodation and storage of materials within the root protection area is prohibited.
- 5.5 All weather tree protection posters as detailed above are to be securely fixed to the tree protection fencing at 10 metre centres in plain view.
- 5.6 The tree protection fencing to the retained trees G01, G06 & G07 is to be erected following tree removals as detailed above and on the Tree Protection plans BEA 25-006-01 and maintained in place until the completion of the project.



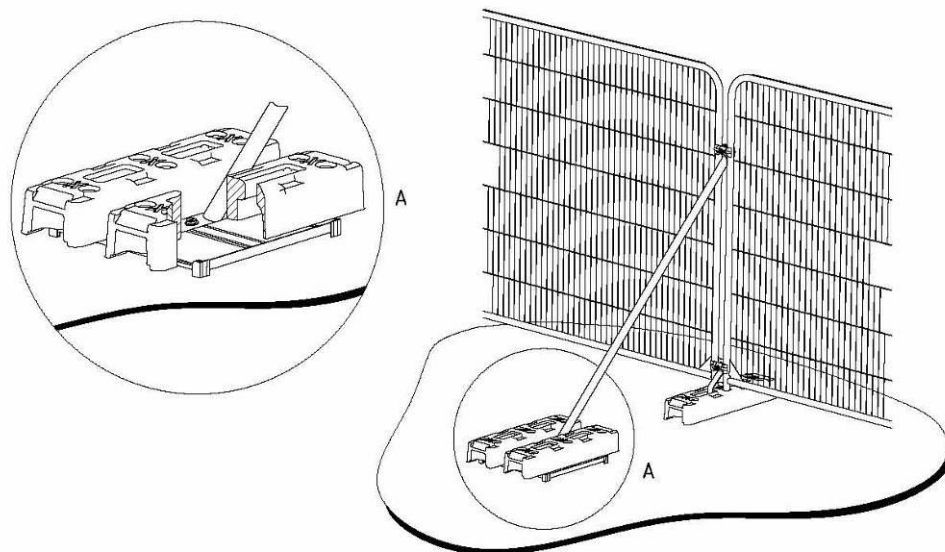
BS 5837 Figure 02; Default Specification for protective barrier

- 5.7 Care is to be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification that provides an equal level of protection is to be prepared in conjunction with the project arboriculturalist as illustrated within Figure 3 of BS 5837:2012 above.

- 5.8 Where there is existing hard standing an alternative specification fence in accordance with Figure 03 with above-ground stabilising systems is to be installed, as illustrated on the Tree Protection plan BEA 25-006-01.



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

BS 5837 Figure 03; Examples of above-ground stabilising systems

- 5.9 Where indicated on the Tree Protection Plan 25-006-01 the existing metal palisade boundary fencing is to be retained insitu during the construction works to act as Tree Protection fencing.

6.0 Excavations within the RPA

- 6.1 To avoid damage to tree roots, existing ground levels are to be retained within the RPA. Intrusion into soil within the RPA is not acceptable, and topsoil within it is to be retained in situ. The change of ground level, excavating, stripping or disturbing topsoil within the RPA is prohibited.

6.2 Where indicated on the Tree Protection drawings BEA 25-006-01 excavations within the Root Protection Area are to be excavated by hand-held tools and / or compressed air soil displacement.

- a) Exposed roots are to be immediately wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping are to be removed prior to backfilling, which is to take place as soon as possible.
- b) Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps.
- c) Roots occurring in clumps or of 25 mm diameter and over are to be severed only following consultation with an arboriculturalist.
- d) Prior to backfilling, retained roots are to be surrounded with topsoil or uncompacted sharp sand (builders' sand is not be used), or other loose inert granular fill.
- e) Soils or other suitable material are then to be replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots and approved by the project arboriculturalist.

7.0 Site Compound and Working Area

7.1 The site compound area is to be located within the area of existing hard standing outside of the Construction Exclusion Zone (CEZ) and accessed from Silburn Way. All contractors staff car parking is to be contained within the existing hard standing.

8.0 Haul Routes

8.1 The haulage of materials and deliveries from Silburn Way is to utilise the existing hard standing / or proposed hard surfacing areas which are to be constructed to base course prior to the commencement of building construction.

8.2 The planning of site operations is to 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. Any transit or traverse of plant in proximity to trees are to be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is maintained at all times. Access facilitation pruning is to be undertaken as specified to maintain this clearance.

9.0 Temporary Topsoil Storage

9.1 The stripped topsoils are to be stored in temporary mounds outside of the construction exclusion zones of the retained trees. In accordance with BS 4428 topsoil heaps should not exceed 3m in height.

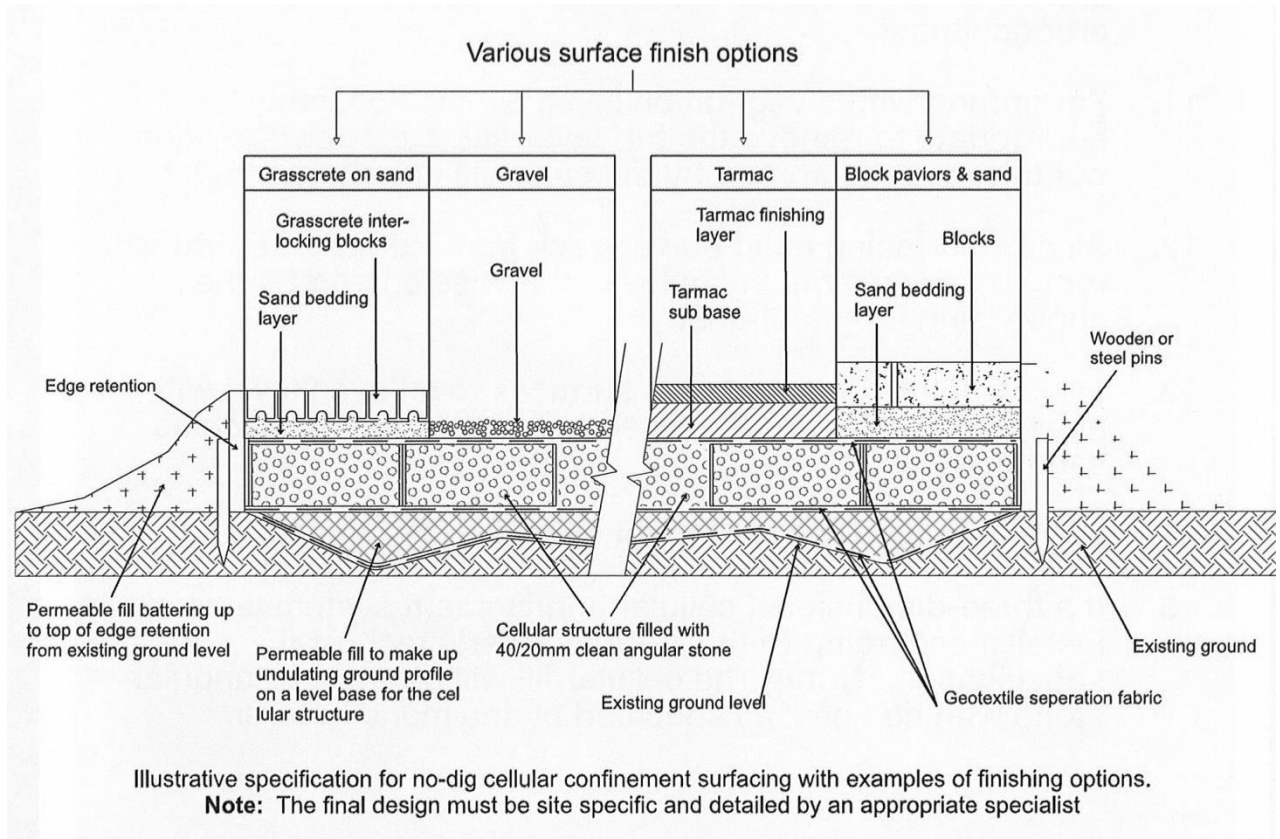
10.0 Removal Of Existing Hard Surfacing

- 10.1 Prior to the removal of the existing tarmac and pcc kerbs the tree protection fencing is to be installed to protect the existing trees in accordance with BS 5837:2012.
- 10.2 Care is to be taken not to disturb tree roots that might be present beneath the existing surfacing. Hand-held tools or appropriate pedestrian operated machinery is to be used (under arboricultural supervision) to remove the existing surface, working backwards over the area, so that the machine is not moving over the exposed ground
- 10.3 Any exposed tree roots are to be treated in accordance with section 7.2 of BS5837:2012 and as detailed above.
- 10.4 Sections of the existing tarmac hard standing that are within the RPA's of the trees to be retained and are within the proposed hard standing area are to be assessed for the suitability of subbase re-use, thus negating the need for deep excavations.
- 10.5 Where the existing subbase is considered unsuitable for reuse the existing tarmac and subbase is to be removed to expose the original formation layer (taking care not to disturb tree roots that might be present within / beneath the subbase material) and new permanent hard surfacing installed using 'no dig' principles as described below to avoid the compaction of the exposed root protection areas.
- 10.6 Where the existing hard surfacing is to be removed for soft landscaping the tarmac is to be removed as described above to the original formation level (taking care not to disturb tree roots that might be present within / beneath the subbase material) and infilled with topsoil to the landscape architects specification.

11.0 New Permanent Hard Surfacing Construction

- 11.1 The construction of new permanent hard surfacing within the root protection area is to be of design that does not require excavation into the soil, including through lowering of levels and/or scraping, in accordance with Clause 7.4.2 of BS5837:2012. If it is intended to use the new surface for construction access, it is essential that the extra loading and wear arising from this are taken into account during the design process
- 11.2 The structure of the hard surface is to be designed by the project engineers to suit the CBR of the existing ground and to avoid localized compaction by evenly distributing the loading over the track width and wheelbase of any vehicles expected to use the access incorporating a three dimensional cellular confinement system such as 'Cellweb'.
- 11.3 The Cellweb is to be laid on a needle punched polypropylene or polyester geotextile with a CBR puncture resistance of 4000N and infilled with 40/20mm clean angular fill i.e Granite, Basalt or Limestone to act as a load suspension layer. The infill is to be rolled without vibration (maximum weight 1000kg/m), not compacted. MOT Type 1, 2 & 3 are not acceptable fill materials.

- 11.4 For roads or other new surfaces is likely to be subject to de-icing salt application, an impermeable barrier is to be incorporated to prevent contamination of the rooting area. Run-off is to be directed away from the RPA. In addition where a permeable surface is to be used by vehicular traffic, a geotextile is to be installed beneath the sub base to help prevent pollution contamination of the rooting area below.



Cellweb Section – Tree Root Protection

- 11.5 If a permeable surface is to be used by construction traffic, this is to be protected with a temporary sacrificial surface laid over a geotextile separator to ensure that its permeability is retained (i.e. interstices should not become blocked during construction).
- 11.6 The materials and edgings are to conform with clause 7.4 and Annex A1.5 of BS5837:2012 to local authority approval. Hard surfaces above the granular material are to be permeable and gas porous, such as permeable asphalt, proprietary infiltration system block pavers or insitu concrete (with formed aeration holes).
- 11.7 Edgings are to be non invasive ground contact structures such as pinned timber sleepers, PCC kerbs set in concrete (at the edge of geocells or on top of concrete filled geocells) or other proprietary metal edging strip products. Topsoil backfill at the edge of no dig areas should be no deeper than 250mm.

12.0 Security Fencing & Gate installation:

- 12.1 The proposals require the installation of new gates and security fencing within the RPA of trees G07, therefore careful consideration is required to ensure the existing trees are protected during construction and to ensure that the gate and fence posts are to be installed whilst causing minimal damage to the tree.
- 12.2 To limit ground compaction access to the fencing and gate locations is to be from the existing / proposed hard standing and carried out on completion of the main works.
- 12.3 The existing fencing is to be removed prior to the installation of the new fencing with the existing posts cut off at ground level rather than disturbing the ground within the RPA by pulling out the concrete fence footings.
- 12.4 The proposed locations of the gate and fence posts are to be set out in advance of installation. A site investigation is to be carried out to determine their optimal location whilst avoiding damage to structural roots by means of trial holes made with a post hole bar to a depth of 600 mm.
- 12.5 On completion of the works all surplus materials are to be collected and disposed of offsite, any temporary ground protection removed and the affected areas made good.

13.0 Soft Landscape Implementation

- 13.1 The proposals require the installation of native tree and shrub planting and wildflower seed sowing within and at the edge of the RPA of trees G01, G06, G07 and therefore careful consideration is required to ensure the existing trees are protected during implementation including how the trees and shrubs are to be planted whilst causing minimal damage to the trees.
- 13.2 To limit the risk of ground compaction, access to the planting areas is to be from the proposed hard standing with the preparation, cultivation and planting works carried out after the completion of the main construction activities.
- 13.3 To avoid unnecessary root damage, no cultivation of the topsoil is to be carried out within the Tree Protection Areas of the retained trees. Tree and shrub transplants or whips are to be pit planted. No standard tree pits are to be excavated within the root protection areas of retained trees.
- 13.4 Imported topsoil is to be a friable sandy loam to prevent the need for heavy cultivation prior to seeding. To avoid unnecessary root damage, only light cultivation of the topsoil using hand held rakes is to be carried out within the Tree Protection Areas of the retained trees.
- 13.5 The soft landscape areas outside of the construction exclusion zones / RPAs of the retained trees are to be set out, cultivated and planted as required prior to the removal of the tree protection fencing. The landscape works within the construction exclusion zones area to be carried out by hand only.

- 13.6 Prior to planting within the RPA the proposed locations of the transplants / whips are to be set out in advance and trial pit investigations using handheld tools to a maximum depth of 150 mm are to be carried out. Where large roots (greater than 25mm in diameter) are exposed the planting locations are to be changed to avoid damaging the roots.
- 13.7 During planting the following guidance should be followed:
- 1) Exposed roots are to be immediately wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping are to be removed prior to backfilling, which is to take place as soon as possible.
 - 2) Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps.
 - 3) Roots occurring in clumps or of 25 mm diameter and over are to be severed only following consultation with an arboriculturalist.
 - 4) Prior to backfilling, retained roots are to be surrounded with topsoil or uncompacted sharp sand (builders' sand is not be used), or other loose inert granular fill.
 - 5) Soils or other suitable material are then to be replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots and approved by the project arboriculturalist.

14.0 Arboricultural Supervision

- 14.1 The Principal Contractor is to appoint a suitably qualified arboriculturist to be responsible for all arboricultural matters on Site and will be appointed to inspect, monitor and supervise the implementation of the works as required within in this method statement.
- 14.2 Tree surgery recommendations are to be carried out prior to construction. Tree works are to be carried out by an Arboricultural Association registered Tree Surgeon, refer to the Schedule of Tree Works on drawing BEA 25-006-01.
- 14.3 The erection of the Tree Protection fencing is to be inspected and approved by the project arboriculturalist prior to the commencement of construction.
- 14.4 All excavation works within the construction exclusion zones / root protection areas of those trees to be retained including the removal of the existing tarmac surface are to be supervised by the project arboriculturalist.
- 14.5 A programme of works is to be provided at the prior to the commencement of the project onsite and two weeks advance notification is to be given for site inspections.

Appendix A: Technical Definitions

Access Facilitation Pruning:	One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Impact Assessment	An evaluation of the direct and indirect effects of the proposed design on the trees identified within the Tree Survey, where necessary recommending mitigation or amendments to the design.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Construction Exclusion Zone	An area based on the root protection area from which access is prohibited for the duration of a project
Root Protection Area (RPA)	The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is considered a priority
Tree Protection Plan	A scale drawing informed by descriptive text where necessary, based upon finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

Appendix B: References

1. BSI (2012) '*British Standard 5837:2012 Trees in relation to design demolition and construction – recommendations*' British Standards Institution, London
2. NJUG Volume 4 (2007) '*Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.*' The National Joint Utilities Group
3. BSI (2010) '*Tree work – Recommendations*' British Standards Institution, London
4. AA (2020) '*The Use of Cellular Confinement Systems Near Trees: A Guide to Good Practice*' Guidance Note 12. Arboricultural Association.

TREE PROTECTION NOTES:
'Trees in relation to design demolition and construction' BS5837:2012

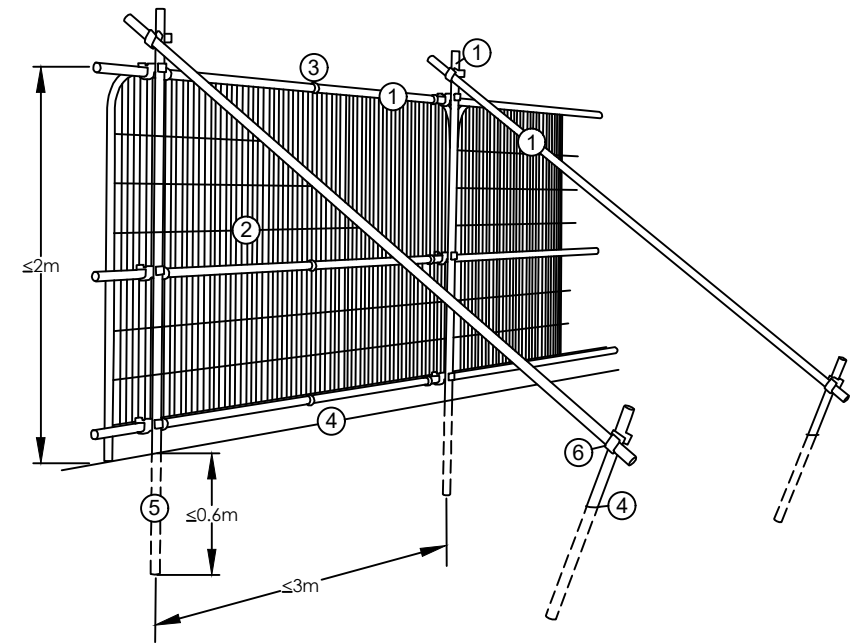
1.0 PRIOR TO COMMENCEMENT OF WORKS:

1.1 PRIOR TO COMMENCEMENT: all trees that are being retained onsite shall be protected by barriers and / or ground protection before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. The 'Root Protection Area' (RPA) associated with existing trees designated for retention shall be protected from damage by erection of scaffold framework barriers in accordance BS 5837:2012 Figure 2 or Figure 3 including where specified appropriate ground protection.

1.2 EXTENT OF ROOT PROTECTION AREA (RPA): as shown on the Tree Protection Plan (TPP) the RPA is generally to be in accordance with Annex D, Table D.1 'Root Protection Area' - as an area equivalent to a circle radius 12 times the stem diameter (single stem trees) or based on the combined stem diameter for multitem trees (trees with more than one stem arising below 1.5m above ground level) refer to Clause 4.6.

1.3 TREE PROTECTION BARRIER (FIGURE 2): a vertical and horizontal scaffold framework, well braced to resist impacts as illustrated below (refer to Figure 2 of BS5837:2012). The vertical tubes should be spaced at a maximum interval of 3 metres and driven securely into the ground. Care should be taken to avoid underground services and contact with structural roots. In the presence of underground services, retained hard surfacing or where special circumstances dictate an alternative specification as illustrated in Figure 3 of BS5837:2012 may be acceptable subject to agreement with the project arboriculturalist and the local planning authority.

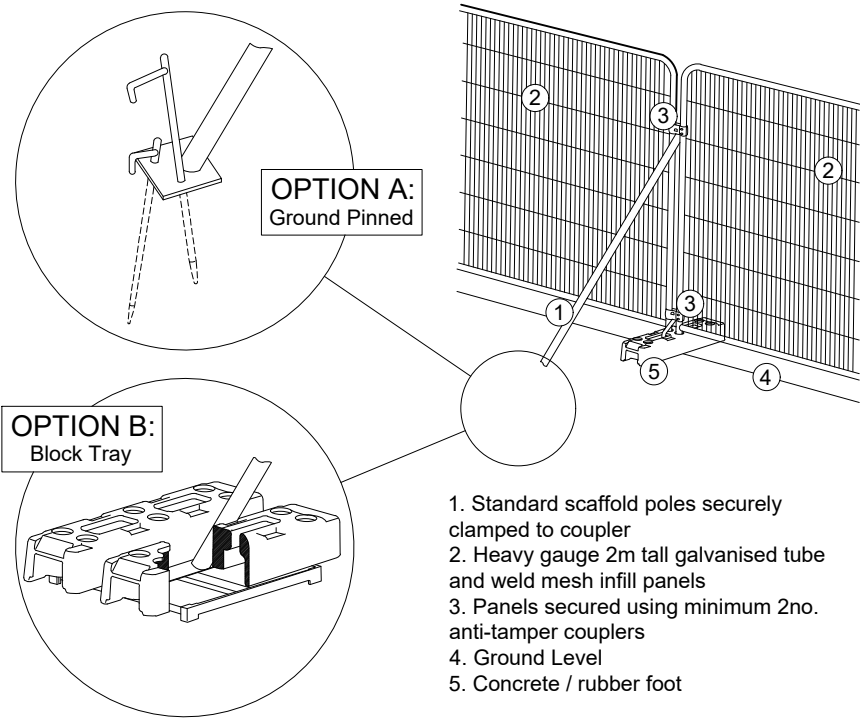
All weather site notices should be attached to the barrier with words such as "CONSTRUCTION EXCLUSION ZONE - NO ACCESS". Once installed barriers and ground protection shall be not be removed or altered without prior approval of the project arboriculturalist and where necessary approval from the local planning authority.



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

1.4 TREE PROTECTION BARRIER (FIGURE 3): a 2m high mesh panel fence line, well braced to resist impacts as illustrated below (refer to Figure 3 of BS5837:2012). Panels to be attached using a minimum 2no. anti-tamper couplers at minimum 1m centres and uniform throughout fence line. Panels to be secured at base with rubber or concrete feet. Panels to be supported on inner side using scaffold stabiliser struts, clamped to fence and secured to ground using either base plates and ground pins or (where services and roots dictate) mounted onto block tray as illustrated.

All weather site notices should be attached to the barrier with words such as "CONSTRUCTION EXCLUSION ZONE - NO ACCESS". Once installed barriers and ground protection shall be not be removed or altered without prior approval of the project arboriculturalist and where necessary approval from the local planning authority.



2.0 ADDITIONAL PRECAUTIONS:

2.1 Planning of site operations should take sufficient account of wide or tall loads, or plant with booms, jibs or counterweights (including drilling & piling rigs) in order that they can operate without coming into contact with retained tree. The transit or traverse of plant in proximity to trees shall be conducted under supervision of a banksman to ensure adequate clearance from trees is maintained at all times. Access facilitation pruning as agreed with the project arboriculturalist and/or local authority should be undertaken where necessary to maintain clearance. NB Works to trees protected by a Tree Preservation Order or within a Conservation Area will need approval by the local authority.

2.2 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 e.g. concrete mixings, diesel oil and vehicle washings. Allowances shall be made for sloping ground to avoid damaging materials running towards retained trees.

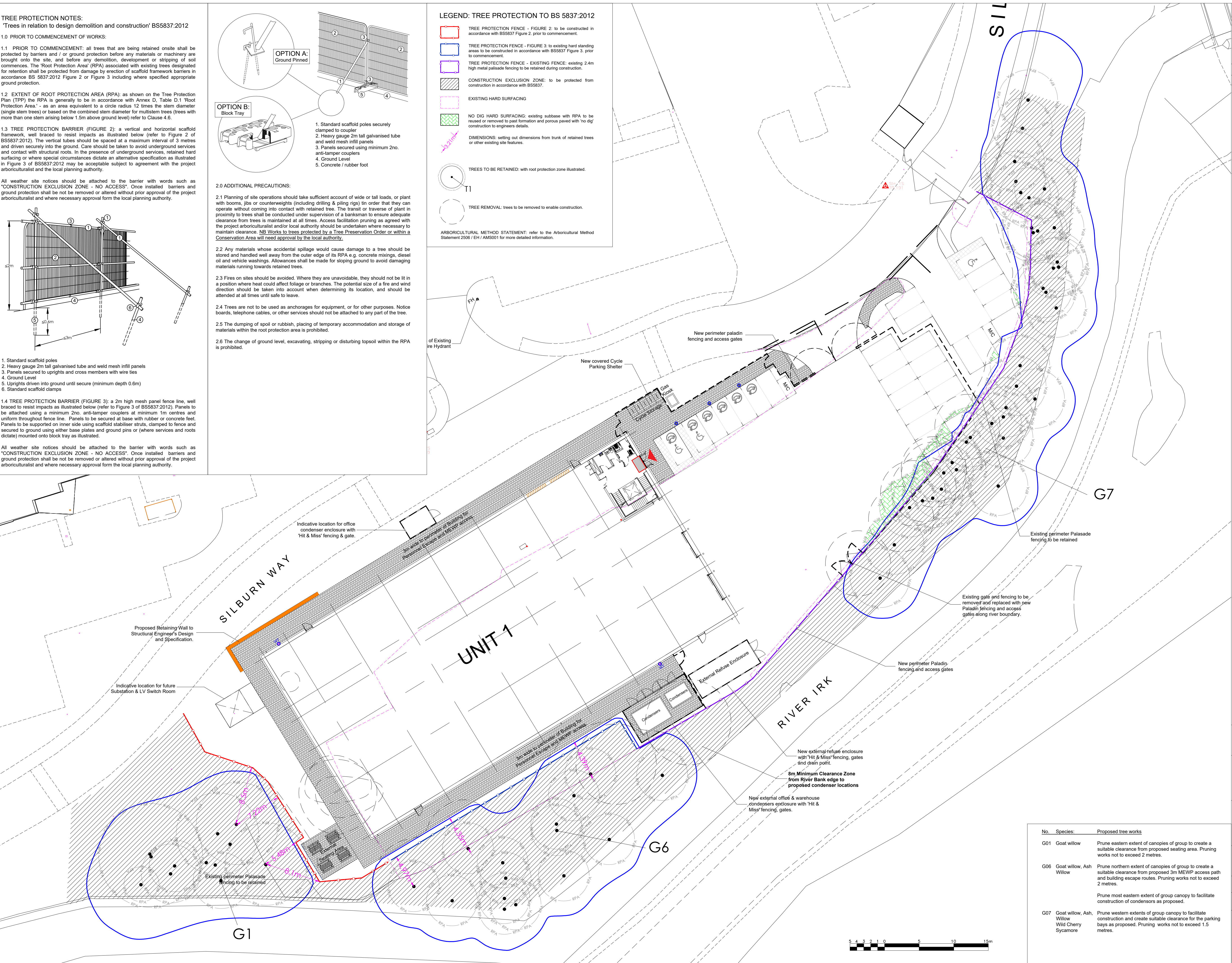
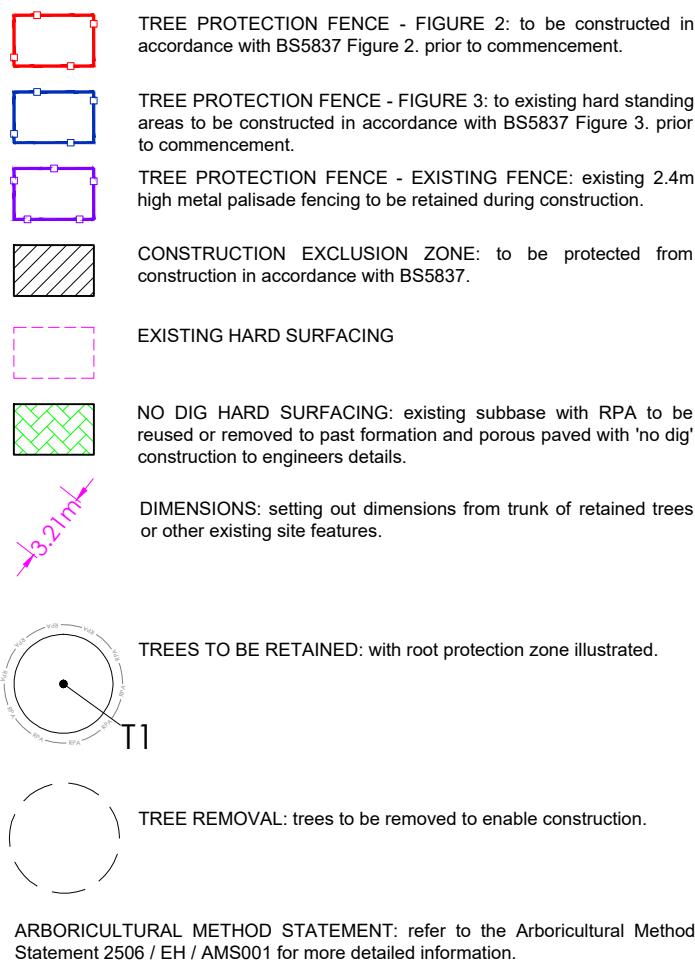
2.3 Fires on sites should be avoided. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and wind direction should be taken into account when determining its location, and should be attended at all times until safe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

2.4 Trees are not to be used as anchorages for equipment, or for other purposes. Notice boards, telephone cables, or other services should not be attached to any part of the tree.

2.5 The dumping of spoil or rubbish, placing of temporary accommodation and storage of materials within the root protection area is prohibited.

2.6 The change of ground level, excavating, stripping or disturbing topsoil within the RPA is prohibited.

LEGEND: TREE PROTECTION TO BS 5837:2012

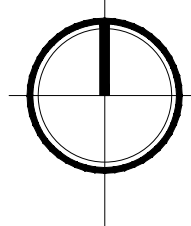


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CANMOOR

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RHODES BUSINESS PARK
MIDDLETON

title:
TREE PROTECTION PLAN

status:
PLANNING

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Bea Landscape Design Ltd
132A 'The Westlands', Compton Road,
Wolverhampton, WV3 9QB
T: 01902 424 950 / 01902 425 001
E: info@bealandscape.co.uk
W: www.bealandscape.co.uk



landscape architects - arboricultural consultants
urban designers - environmental assessors



address:

132A The Westlands
Compton Road
Wolverhampton
WV3 9QB

tel: 01902 424 950

email: info@bealandscape.co.uk

web: www.bealandscape.co.uk