
**ARBORICULTURAL
IMPACT ASSESSMENT
METHOD STATEMENT &
TREE PROTECTION PLAN**

DATE: September 2023

**LAND TO SIDE & REAR OF:
1 CRESCENT ROAD
LONDON N11 3LB**

Prepared for:

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<u>Client:</u>	<u>Site Address:</u>	<u>Local Planning Authority:</u>	<u>Date:</u>
Yasir Shaikh 44 Connaught Gardens London. N13 5BS.	Land to Side & Rear of 1 Crescent Road. London. N11 3LB.	L B Barnet. Planning and Building Control. 2 Bristol Avenue, Colindale. London, NW9 4EW.	September 2023.

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

For trees on land to the side & rear of:

1 CRESCENT ROAD. N11 3LB

1.0 Preamble.

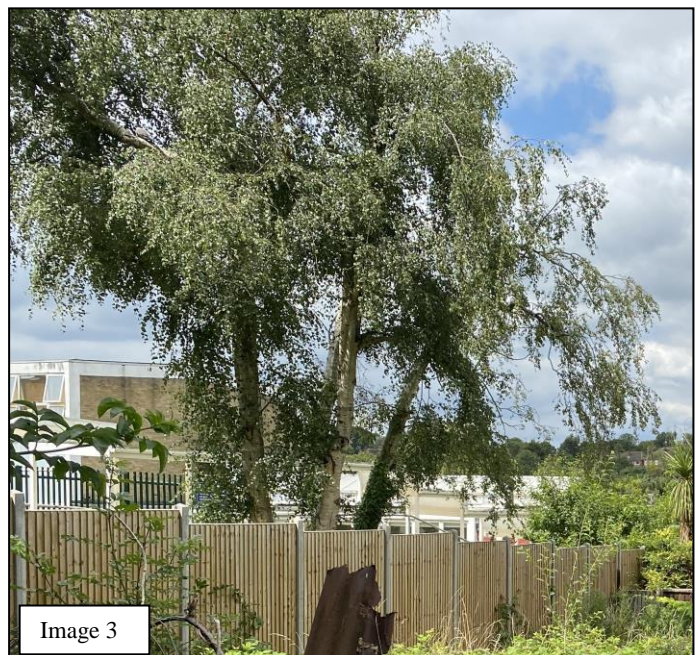
- 1.1 This Arboricultural Impact Assessment forms one part of a Planning Application that is to be submitted to the LB Barnet. It relates to the protection of 2 trees on, or adjacent to a proposed building plot to the side and rear of the property known as 1 Crescent Road. N11 3LB.
- 1.2 It is proposed to construct an above ground single story dwelling, with basement below, along with an ancillary structure for bin and bike storage.
- 1.3 The report/assessment identifies the species and location of the trees on the site (if any) and those close to the site that may or may not be affected by the proposed development in some way. It puts forward management and retention proposals, along with proposals for protection of any retained tree and it's rooting system during the whole construction phase of the project.
- 1.4 Local Planning Authorities are obliged to consider that suitable trees should be retained where possible within a development site when assessing planning proposals.
- 1.5 **British Standard 5837:2012. Trees in relation to design, demolition and construction – Recommendations...** provides guidelines and processes so as reasoned decisions can be made with concern to trees in relation to building works. It is the guidelines and processes of **BS 5837:2012** that have been considered in the production of this report.



Area Location of building plot

2.0 Introduction

- 2.1 Crescent Road is a north-westward continuation from the adjoining Glenthorne Road. #1 is on the southwestern side. The proposed building plot extends along the southern side of #1 and then turns to the northwest to the rear of the garden area. Entrance to the site is gained directly off Crescent Road.
- 2.2 The plot contains two dilapidated garden sheds and is overgrown with ruderal vegetation. There are domestic gardens on both sides. ‘School grounds,’ and ‘Scouts owned’ property lie directly to the west of the plot. There are only two ‘off-site’ trees that the proposed new build could potentially affect. It is believed neither tree is subject to a Tree Presentation Order. One, an Oak, is owned by the 3rd Barnet Scout Group in nearby Stanford Road. The other, a Birch, is in the ownership of Friern Barnet School in Hemmington Avenue



3.0 Soil Conditions.

- 3.1 It is an engineering given that the stability of a building is ultimately dependent on the design and depth etc. of its foundations being fit for purpose to support the structure in the given substrate that the foundations are built into.
- 3.2 The British Geological Survey provides information on the makeup of soils for the whole of Britain through its web application 'Geology Viewer'. It details the type of 'superficial deposits' and/or the type of 'bedrock' there is to be found in any given area.
- 3.3 The substrate for Crescent Road is deemed to be London Clay at the surface with no overlying superficial deposits of other materials. (Source: British Geological Survey).
- 3.4 Clay soils are 'expansive', i.e. the 'volume' of the soil can change depending on the water content within its structure. Expansive clay soils are a known source of problems to buildings that have inadequate depth to their foundations to resist movement from volume changes. Such movement often occurs on a summer/winter seasonal basis. Changes in water volume in clay can lead to such structural problems as subsidence or heave.
- 3.5 Vegetation generally, and tree roots in particular can affect soil moisture volumes in clay through extraction of water from the soil by natural root activity. The species of a tree and the distance it is from a building are important factors to consider for the design of foundations in clay soils.
- 3.6 Other types of soils such as chalk, or sand and gravel suffer little, or no volume change depending on their moisture content. Such soils provide a stable base on which to build.
- 3.7 With a proposed new building sitting upon a clay substrate and trees in close proximity. There is the potential for the stability of the building to be affected by the interaction of the tree roots with the clay soils, possibly resulting in subsidence of parts of the structure (given particular circumstances).
- 3.8 The proposed construction is to be undertaken in the vicinity of two 'off-site' trees. The implications upon the trees and the methods for tree protection and preservation during the ground works and building construction are set out later in this report.
- 3.9 Tree roots are typically found in the first 600mm-1m depth of a soil profile. It is often structures with shallow foundations that suffer problems of either heave or subsidence in clay soils.
- 3.10 With the correct type and depth of foundations, piling with bridging beams/slab is commonly used in clay soils, and with 'heave' protection measures built into the design of the piles. Potential problems of vegetative related heave or subsidence can be overcome. The design of the foundations is for others.
- 3.11 As mentioned at section 1.2 above. A basement is to be incorporated into the new build. The design of the basement 'box' will be undertaken by the appropriate qualified specialists. Such design is beyond the scope of this report. However. It is proposed that driven inter-locking steel sheets will be used and left in situ to support the ground surrounding the basement.
- 3.12 The basement 'box' and additional piles will support a slab. This will support the rest of the above ground parts of the structure.

4.0 Constraints.

- 4.1 There are no trees actually growing on the proposed building plot to be affected by the proposed structures or by new utility services being brought onto the site.
- 4.2 The two trees potentially affected by the building proposal are both ‘off-site’ trees in the ownership of others, growing on separate land holdings.
- 4.3 It is believed that neither tree is subject to a Tree Preservation order, nor are they growing in a conservation area. Given this circumstance. There are no legal requirements to be adhered too that would prevent remedial or facilitating works being undertaken on the trees, or parts of the trees such as canopy or root pruning.
- 4.4 It is well established in English Common Law that no ‘*Legal Right*’ exists for a neighbour to allow roots or branches from a tree, in their ownership, to spread across a boundary so as to prevent *their neighbour* enjoying the full legal use of their property in whatever manner they choose. This includes erecting a legally consented structure close to their own boundary.
- 4.5 The ‘*Right*’ exists for the affected person to remove roots and branches that cross their boundary without seeking consent from the tree owner. The possible exception to this ‘*Right*’ is that the tree should not be rendered unstable and left as a risk to people or property.
- 4.6 Given that type of situation. There still exists the Right of the affected person to seek the removal of the tree under the Common Law Tort of ‘Nuisance’ or if damage is occurring, ‘Trespass’.
- 4.7 Notwithstanding the ‘*Rights*’ mentioned above. It is the intention of the owner of the plot to minimize as much as is practically possible any impact upon the Oak or Birch trees by employing the most suitable design and construction methods for the proposed build.
- 4.8 The benefits of having prominent trees growing close to the plot is recognized, as is the fact that construction can have an impact on the environment. To lessen one part of the impact from this site, where possible, ‘Green Roofs’ are to be incorporated into the above ground structures.
- 4.9 It is in the following pages of this Arboricultural Impact Assessment that the ‘impact’ (if any) upon the root zones of the trees will be addressed to try to ensure that the proposed new build will have little, or no impact, on the health or stability of the trees as they now stand.

5.0 Tree Survey Information.

- 5.1 The trees were inspected on the 10th August 2023 from the ground only and from the area of the proposed building plot with the aid of various hand held inspection tools and equipment.
- 5.2 T1 Oak is located approximately 3m from the southeast corner of the plot. T2 Birch is located approximately 3m from the southwestern boundary of the plot. Other trees and shrubs in surrounding gardens are considered to be as far away as to have no influence over plot and as far away to be unaffected by the build. Therefore no mention is made of other trees and no information is recorded in this report.
- 5.3 In accordance with the criteria recommended in B5837:2012. Details on the condition of the trees is provided in appendix 1 on page 9.

6.0 Tree Category Evaluation.

- 6.1 The accepted criteria for evaluating how suitable each tree is for retention within a development is that as suggested within BS 5837:2012. Table 1. *Cascade chart for tree quality assessment. (Reproduced below).*
- 6.2 When inspected, each tree and/or group feature is assigned one of four main categories and characterised by an additional sub category that determines how suitable that tree/group would be for retention within the development proposals, and therefore the degree to which it may constrain development on the site. Examples would be, A1/2/3. B1/2/3. C1/2/3. Or U (remove tree).
- 6.3 BS 5837:2012 recommends that all trees apart from those with stem diameters <150mm or classified as Category U should be considered for retention and viewed as a potential site constraint.
- 6.4 The four categories are as follows:
- 6.5 **Category A** (coloured green) trees are those of high quality and/or of significant historical, cultural or amenity value, whereby they could make a substantial contribution to the site and/or the area.
- 6.6 The retention of Category A trees should be considered during the design phase and afforded adequate physical protection during the construction phase in accordance with the relevant sections of BS 5837:2012.
- 6.7 **Category B** (coloured blue) trees are those of moderate quality and value, and of a condition that they make a substantial contribution to the site.
- 6.8 The retention of Category B trees should be considered during the design phase and afforded adequate physical protection during the construction phase in accordance with BS 5837:2012 where retained.
- 6.9 **Category C** (coloured grey) trees are considered to be of low quality and value, but of an adequate condition to remain in the short-term.
- 6.10 Trees with a stem diameter of less than 150mm (measured at 1.5m above ground level) are classified as Category C; these trees should also be retained where possible but where they form a significant constraint to development their removal should be permitted. Where they are to be retained they should be afforded adequate consideration during the design phase and physical protection during the construction phase in accordance with BS 5837:2012.
- 6.11 **Category U** (coloured red) trees are of such a condition that any existing value would be lost within 10 years. As a result it is recommended that Category U trees are not considered a constraint for development and are removed prior to construction commencing.
- 6.12 **Sub category 1** indicates that the tree/group main value is arboricultural. It may be a particularly good example of the species or may be rare.
- 6.13 **Sub category 2** indicates that the overriding factor for retention is due to the landscape value that the tree/group provides. It may be part of a group feature such as a screen for example.
- 6.14 **Sub category 3** indicates that a cultural factor was the overriding value e.g. it may have historical or commemorative importance.



Table 1. Cascade chart for tree quality assessment.

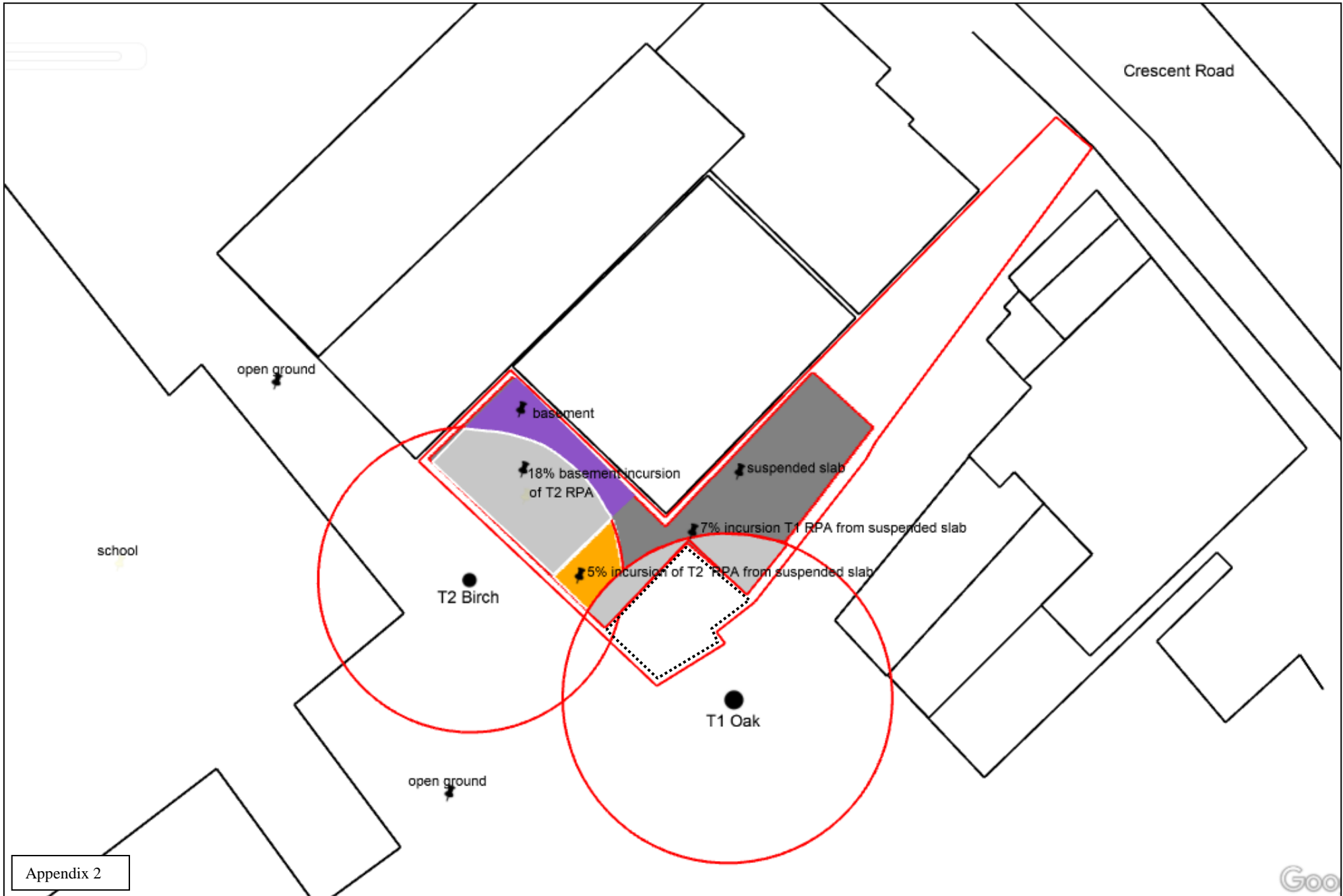
Category and definition	Criteria (including subcategories where appropriate)		
Trees unsuitable for retention (see note)			
Category U Those in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have serious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



7.0 Tree Survey Schedule. (Appendix 1).

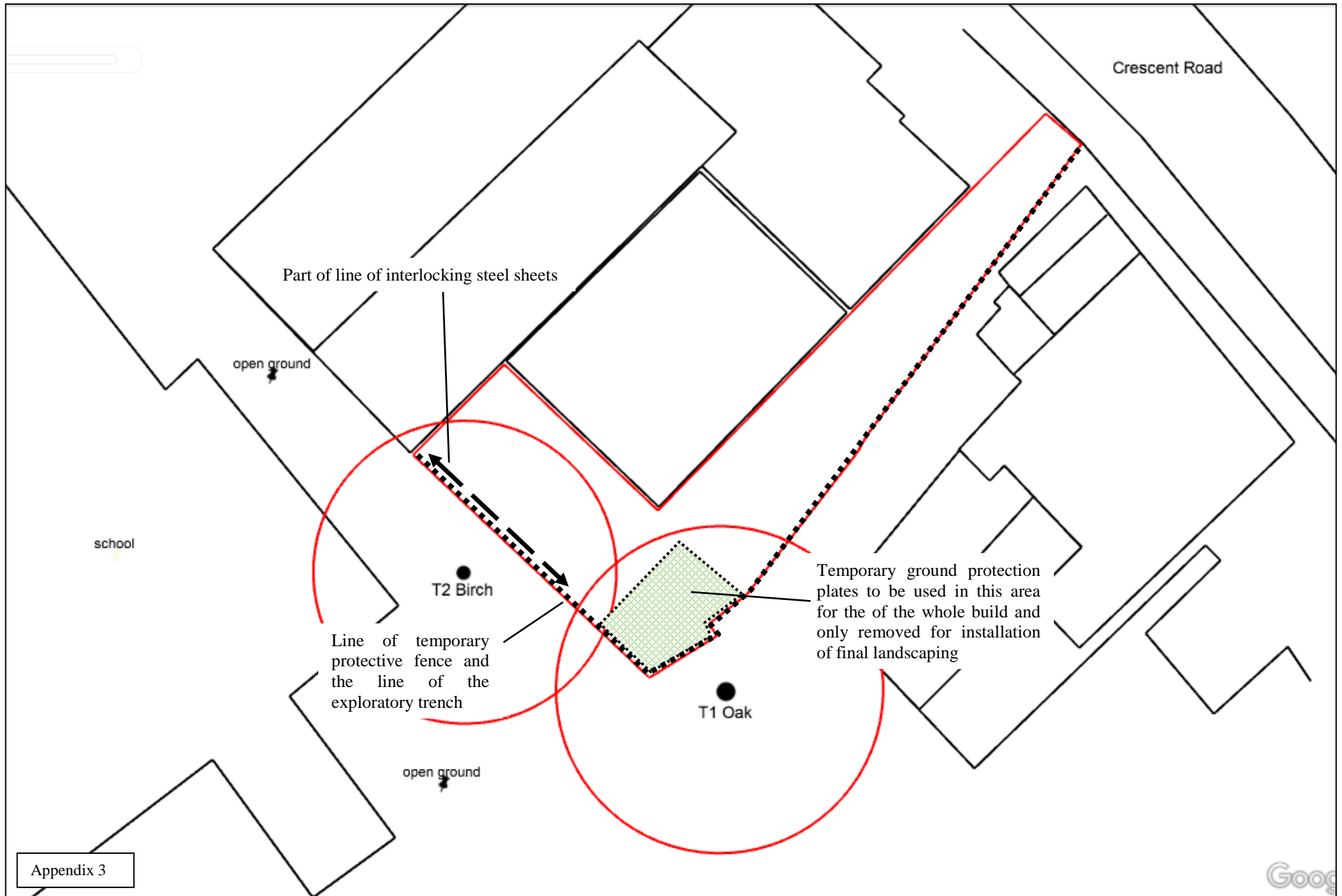
Tree No'	Species	Age class	DBH mm	Height metre	Crown spread	Height of first branch	RPA	Life Expectancy	B S 5837 Category	Observations	Recommendations
T1	Oak	Semi mature	800	15	3 4 4 4	4.5 w	9.6m	40+	B1	Off-site tree. Single stem to 4.5m. Good form. Balanced crown structure thereafter. Crown reduced in March 2023. Vigorous regrowth through crown. Growing at approximately 3m from southeastern corner of site.	No work required to crown. Will require root pruning at boundary of build site.
T2	Birch x 4 stems	Semi mature	200 200 200 150	9	3 4 4 4	5 ne	9m	20+	C1	Off-site 4 stem tree. Poor form. Topped out in recent past. Growing at approximately 3m from western boundary of site.	No work required to crown. Will require root pruning at boundary of build site.

- 7.2 Appendix 2 below, details the root protection areas for T1 and T2 shown as red circles. The annotations inform the percentage of incursion into the presumed root zones by different elements of the build.
- 7.3 The floor slab of the construction intrudes into the root area of T1 by approximately 7%, and is shown as two light grey polygons. The basement shown as dark blue, intrudes into the presumed root area of T2 by 18% and the floor slab shown in orange by 5%.
- 7.4 Section 7.4.2.3 of BS 5837:2012 informs that:
'New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA'
- 7.5 However. Note 1, attached to section 7.4 informs that:
'piles, pads or elevated beams can be used to support surfaces to bridge over the RPA or, following exploratory investigations to determine location, to provide support within the RPA while allowing the retention of roots greater than 25 mm in diameter.'
- 7.6 With reference to items 4.4 - 4.6 above concerning the removal of intruding roots and branches. Using compressed air displacement, as for example, 'Air-Spade' equipment. It is intended to open up an investigative trench of 0.3m x 1m depth along the south-western boundary and part of the south-eastern boundary to locate roots from both trees that cross into the site. These roots will be cut and treated by following the guidance provided by section 7.2 through to 7.2.4 of BS 5837:2012.
- 7.7 Given that both trees are located approximately 3m from the said boundaries. It is anticipated that roots will be no greater than 50mm /diameter and that no root will be a support root that is likely to affect the stability of the trees. Once the roots have been cut, the driven interlocking steel sheets can be installed after which, excavation of the basement soil can begin.
- 7.8 The open ground around the trees is approximately seven times greater in area than both the root areas of T1 and T2 combined. This is sufficient for regrowth from the cut root ends to exploit in order to mitigate the loss of existing roots.



Appendix 2



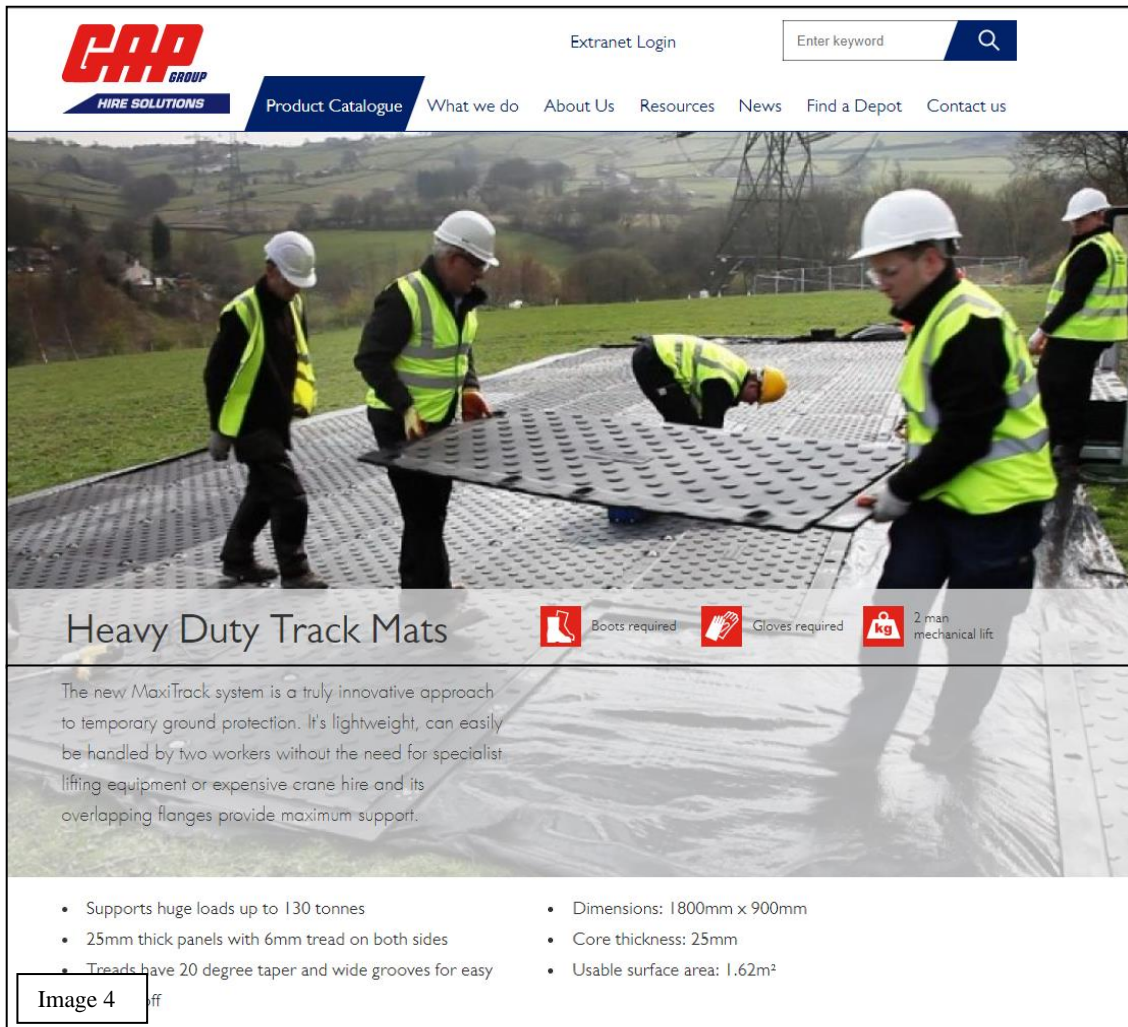


Appendix 3



8.0 Method Statement & General Protection Measures. (If applicable).

- 8.1 To prevent chemical leach into the soil where a slab is to be cast onto piles in root zone areas. An impermeable flexible sheet barrier such as, or similar to 'Visqueen' should be placed on the substrate and raised at the edges to the finished level of the slab, previous to casting the slab.
- 8.2 Ground protection plates similar in design and specification to those shown below are to be used for the coverage of the area indicated in appendix 1 in front of T1 Oak. The plates are to be positioned after the roots of T1 are cut back to the boundary and after the back filling of the exploratory trench. They are to remain in position through to practical conclusion of the build and only removed for the final landscaping scheme in that area to be implemented.
- 8.3 This type of plate is readily available from plant hire companies as for example, Speedy Hire, or GAP Hire. They meet and comply with the recommended specification of **BS 5837:2012. Section 6.2.3.3.**



The screenshot shows the GAP Group Hire Solutions website. The header includes the GAP logo, 'Extranet Login', a search bar, and navigation links: 'Product Catalogue', 'What we do', 'About Us', 'Resources', 'News', 'Find a Depot', and 'Contact us'. The main image shows workers in high-visibility vests and hard hats installing large, grey, textured track mats on a construction site. Below the image, the text reads 'Heavy Duty Track Mats' and lists features: 'Boots required', 'Gloves required', and '2 man mechanical lift'. A descriptive paragraph states: 'The new MaxiTrack system is a truly innovative approach to temporary ground protection. It's lightweight, can easily be handled by two workers without the need for specialist lifting equipment or expensive crane hire and its overlapping flanges provide maximum support.' A list of specifications follows:

- Supports huge loads up to 130 tonnes
- Dimensions: 1800mm x 900mm
- 25mm thick panels with 6mm tread on both sides
- Core thickness: 25mm
- Treads have 20 degree taper and wide grooves for easy
- Usable surface area: 1.62m²

Image 4

- 8.4 Heavy duty tracked or wheeled site plant and machinery should only be brought on site after the root cutting, after the placement of the protective fencing and after the placement of the aforementioned ground protection mats.

6.2 Barriers and ground protection

6.2.1 General

6.2.1.1 All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see 6.2.3).

6.2.1.2 Areas of retained structural planting, or designated for new structural planting, should be similarly protected, based on the extent of the soft landscaping shown on the approved drawings.

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

6.2.1.4 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the project arboriculturist or local planning authority if appropriate (see also 8.8.1).

6.2.1.5 It should be confirmed by the project arboriculturist that the barriers and ground protection have been correctly set out on site, prior to the commencement of any other operations.

6.2.2 Barriers

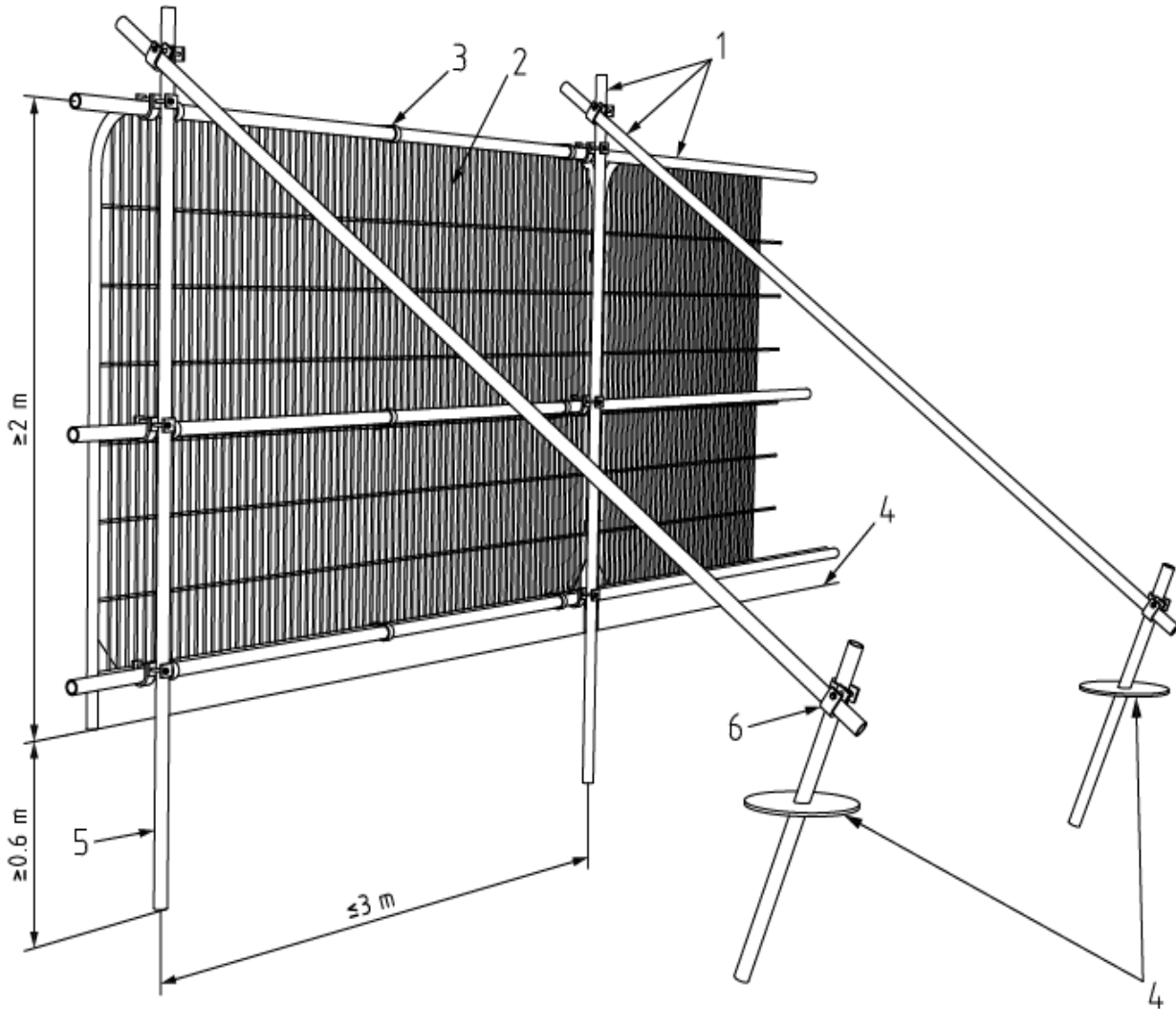
6.2.2.1 Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should 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 should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fencing couplers should be at least 1m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts,

NOTE 2. It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: “CONSTRUCTION EXCLUSION ZONE – NO ACCESS”. Figure 2 **Default specification for**

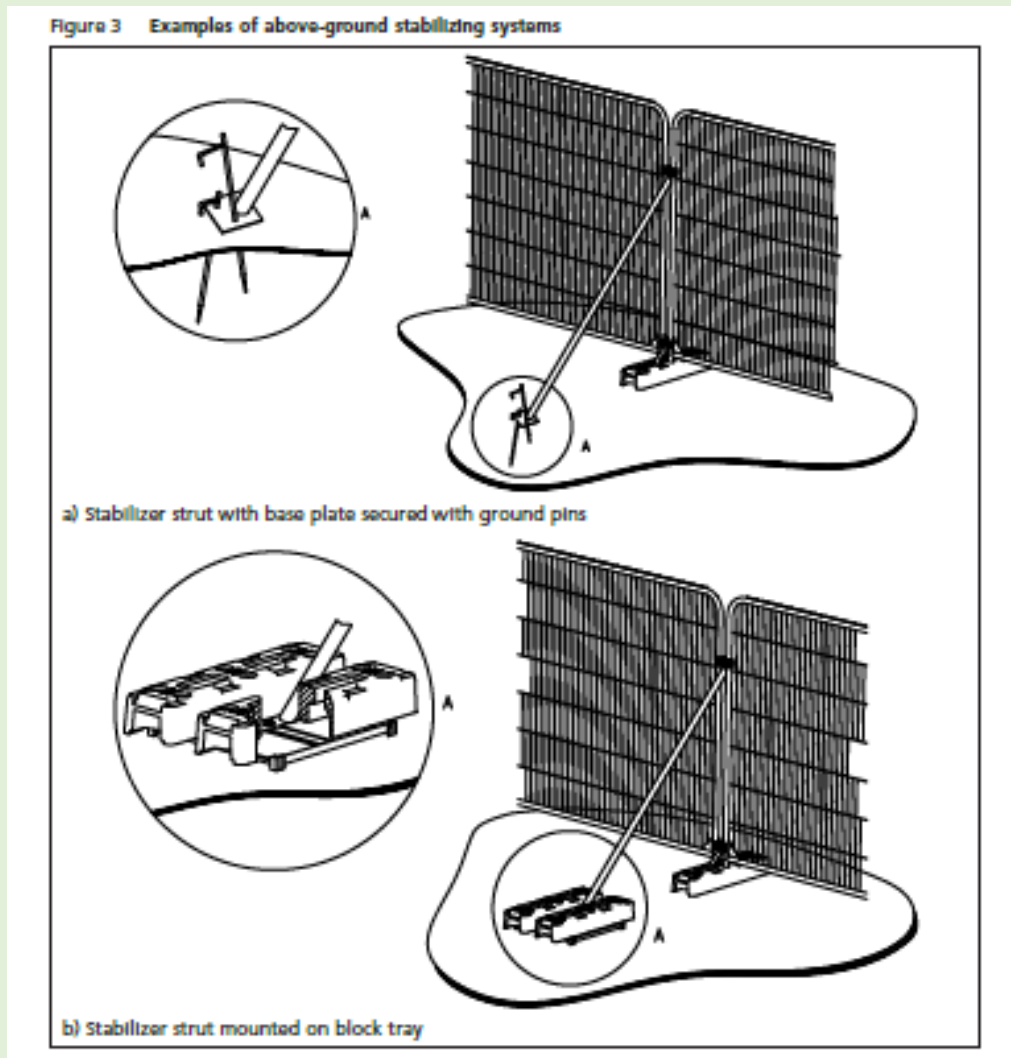


protective barrier

Key

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

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.

8.6 General Protection measures Continued. (If applicable).

All tree works will be carried out in accordance with the British Standards: BS 5837:2012 & BS 3998:2010.

All remedial tree works are to be carried out before the commencement of any construction works on site.

Notwithstanding item 8.2 above. All tree protection measures are to be in place before **ANY** construction work shall begin. **(To include pre-construction site set up, site huts, site services etc.).**

All protective measures and operations shall be in accordance with the above British Standards.

All the protection zones and fencing are to be clearly identified on all issued construction drawings.

All construction personnel shall be made aware of the tree protection measures at site induction.

It shall be made part of contract conditions for site contractors and their sub-contractors that no breach of tree protection measures is to occur.

Any alterations to the pre-construction soil levels, within the protection area shall be limited to grading for soft landscape planting only. The arboricultural adviser is to be informed as to the timing of such works.

NO storage of any materials is to take place within the protection zones unless it be placed upon the ground protection mats.

Liquid, Wet, and Toxic Substances

Examples (Not exhaustive)

- * Cement based materials
- * Diesel fuels, oils and petrol
- * Bitumen and Bitumastic substances
- * Chemicals and Chemical treatments

Materials of the type described above, shall not be stored or discharged within 10m of the protection zones.

Provision must be made to capture run off from all water based site operations such as:

- * Brick cutting machinery - brick cleaning, etc.
- * Cement, mortar or plaster mixing, etc.
- * Water butts, temporary rain drainpipes, etc.

There shall be no washing out or washing down of any vehicle or containers such as concrete delivery vehicles, paint containers, brushes, etc. within the protected area.

There shall be no fires on site or extreme heat sources such as asphalt kilns, within 10m of the tree canopies.

No crane jib, 'swung load' or machine arm (JCB) is to contact any part of tree canopies or trunks.

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**BS 5837:2012. Trees in relation to design,
demolition and construction Recommendations**

BSI Publication.

BS 3998: 2010 Tree work – Recommendations.

BSI Publication.

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