

# Arboriculture Impact Assessment & Method Statement

Proposed Residential Development  
10 Barrack Lane, Aldwick, Bognor Regis

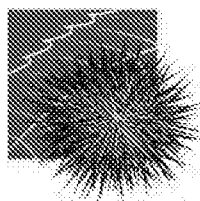


Date: 03rd September 2018 Revision: 01

## PLANNING ISSUE

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Ref: RCo241 / Barrack Lane / Rev01 / Planning / 03-08-18



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## 1.0 INTRODUCTION

### 1.1 The Brief and Scope of the Report

- 1.1.1 Ramsay & Co has been commissioned by Orchard Enterprises to provide a Tree Retention / Protection package in relation to a proposed residential scheme at 10 Barrack Lane, Aldwick, Bognor Regis, West Sussex.
- 1.1.2 This report has been prepared by Andrew Ramsay (BA Hons) MALA who is a Landscape Architect and a chartered member of the Landscape Institute (CMLI).
- 1.1.3 This report should be read in conjunction with *RCo241 / 02 / Tree Protection Drawing* and the accompanying *Existing Tree Schedule*.
- 1.1.4 The purpose of this report is to assist in the planning process with regard to the proposed development in relation to the existing trees and vegetation in line with the guidelines laid out within *BS5837-2012: Trees in Relation to Design, Demolition and Construction – Recommendations*. Where appropriate, the impact on existing trees has been considered with regard to the following:
- *The direct and indirect effects of the proposed development on the surveyed trees in relation to the scheme layout;*
  - *Demolition and general construction activities including access, material storage and provision for scaffolding;*
  - *Installation of hard surface treatments;*
  - *The development proposals.*
- 1.1.5 This Arboriculture Report and Tree Survey is intended for planning purposes only and is not intended as a safety survey / audit or a long-term management plan and should not be used as such. All trees should undergo a regular and full safety inspection as defined by both civil law and the Occupiers' Liability Acts of 1957 & 1984.
- Method Statement: Introduction***
- 1.1.6 The Method Statement (Refer to Section 04) is intended to provide guidance as to how the retained trees and shrubs are to be protected throughout the construction phase of the proposed residential development scheme in line with the recommendations contained within *BS5837-2012: Trees in Relation to Design, Demolition and Construction – Recommendations*.
- 1.1.7 Tree protection measures required to be implemented before the start of any construction / demolition activities include:
- *Tree and shrub removal;*
  - *Positioning and installation of tree protection fencing.*

1.1.8 Measures to be addressed during the construction phase of the proposed development include:

- *Demolition and general construction activities;*
- *Storage of materials, site cabin and facilities location;*
- *Use of materials hazardous to long term tree health;*
- *Installation of service trenches / routes.*

1.1.9 The following drawing and schedule are relevant to this report:

- *RCo241 / 02 / Tree Protection Drawing;*
- *Existing Tree Schedule.*

## 1.2 Site Appraisal

1.2.1 The proposed development site is located to the northern edge of Barrack Lane, Aldwick, Bognor Regis and comprises a residential dwelling with a large rear garden. There are several tree specimens and dense shrub planting to the frontage and trees to the eastern and northern boundaries. Several ornamental trees lie within the garden area. There are two vehicular entrances off Barrack Lane with a layer of loose gravel as surfacing to the frontage.

## 1.3 Proposed Development

1.3.1 The development proposes retaining the existing dwelling and constructing a new, single storey dwelling to the northern part of the large garden area. A new access drive would utilise the existing entrance to the east and run adjacent to the eastern boundary.

## 2.0 TREE SURVEY SUMMARY

2.1.1 The tree survey was carried out on the 05<sup>th</sup> April 2018. A total of 25 no. tree specimens, tree lines and tree groups were surveyed – information regarding the trees and shrubs is contained within the accompanying Existing Tree Schedule.

2.1.2 Two specimens were assessed as being category 'A' trees, whilst eighteen were judged as being Category 'B' trees. The remaining trees and shrubs were graded as 'C'.

| Categorisation | Tree Specimens |
|----------------|----------------|
| <b>A</b>       | 2              |
| <b>B</b>       | 19             |
| <b>C</b>       | 12             |
| <b>U</b>       | 0              |

## 3.0 ARBORICULTURE IMPACT ASSESSMENT

### 3.1 Trees to be Retained / Removed

- 3.1.1 Tree specimens: T11 / T12 / T 16 / T 17 and TG 19 (i) and (ii) are all proposed to be removed to accommodate the proposed scheme. All the remaining trees and shrubs are proposed to be retained and protected within the proposed scheme. T 16 and TG 19 (i) / (ii) are graded as 'B' Trees whilst the remainder all assessed to be 'C'.

### 3.2 Tree Protection Measures

#### ***Tree Protection Fencing***

- 3.2.1 The trees designated for retention are to be retained and protected with tree protection fencing in accordance with '*BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations*'. Refer to RCo214 / 02 Tree Protection Drawing for the proposed tree protection fencing locations.

#### ***Construction Site Access***

- 3.2.2 It is assumed the proposed construction site access will be off Barrack Lane utilising an existing entrance with existing hard surfacing minimising any impact on retained trees to the frontage. The proposed access drive shall be constructed prior to any demolition and construction activities.

#### ***Underground Services***

- 3.2.3 All proposed underground service routes should be located outwith of the existing tree root protection areas.

#### ***Hazardous Materials***

- 3.2.4 All hazardous materials should be strictly controlled in order to ensure that the risk of accidental spillage and thus risk of damage to existing tree root systems is minimised.

#### ***Inspections***

- 3.2.5 It is recommended that a suitably qualified / experienced arboriculture professional is appointed to inspect the tree protection measures prior to any construction activities and to oversee any activities which may be damaging to the existing trees. Regular inspections should be conducted in order to ensure the tree protection measures remain in place as per the guidelines laid out within this report and illustrated on RCo241 / 02 / Tree Protection Drawing.

### 3.3 Summary

- 3.3.1 The proposed development would require several trees to be removed within the garden area. All of these trees are ornamental specimens with limited value - T 16 (Eucalyptus) has been topped and Eucalyptus trees are notorious for achieving a large size quickly – this tree is likely to require ongoing, regular maintenance. The remaining trees are relatively small specimens which could be removed with little impact on wider visual amenity.

## 4.0 METHOD STATEMENT

### 4.1 Phasing of Operations and Contractors Compound

- 4.1.1 All the measures described in this section are intended to ensure the protection of existing trees during the construction of the proposed development. All construction personnel, including sub-contractors and delivery drivers should be made aware of the elements within this report. (For all details refer to RCo241 / 02 / Tree Protection Drawing and the accompanying Existing Tree Schedule).

#### ***Phasing of Tree Protection Measures***

- 4.1.2 The phasing of the tree protection measures are to be as follows;
- *Phase 01– Removal of designated shrubs and trees (Refer to RCo241 / 02 Tree Protection Drawing and Existing Tree Schedule);*
  - *Phase 02– Installation of Tree Protection Fencing and construction of access drive using ‘No Dig’ method (Refer to RCo241 / 02 Tree Protection Drawing);*
  - *Phase 03 – Commencement of demolition / construction activities on site;*
  - *Phase 04 - Removal of Tree Protection Fencing following the completion of major construction activities;*
  - *Phase 05 – Landscaping and associated works.*

#### ***Contractor Movements / Site Access and Egress / Site Office, Facilities and Storage Areas***

- 4.1.3 The contractor site compound is to be located outwith of any existing tree root protection areas and will be located so as to avoid damage to any trees or canopies which are located within, or adjacent to the site boundaries. All operations which are associated with the construction / installation and use of the site compound will be undertaken so as to avoid any damage to existing trees and vegetation.
- 4.1.4 All access to and from the construction site will be via the existing entrance to the south-eastern boundary of the proposed development site. No vehicular movements are to be permitted over unmade ground within the existing tree root protection areas of trees to be retained.

- 4.1.5 All site operations and construction activities will be conducted with due regard for the protection and long-term viability of the existing trees and vegetation which are to be retained according to the guidelines laid out within *BS5837: 2012 Trees in Relation to Demolition, Design and Construction – Recommendations*.

## 4.2 Tree Removal

- 4.2.1 The trees and shrubs to be removed are indicated on *RCo241 / 02 / Tree Protection Drawing*. All tree / shrub works to be carried out prior to the erection of tree protection fencing and construction site activities and great care should be taken to avoid any damage to existing trees / shrubs which are scheduled to be retained. Trees and shrubs should not be felled during the bird nesting season. (normally considered to be 1<sup>st</sup> March – 31<sup>st</sup> July however depending on seasonal temperatures, some birds may continue breeding into August and September).
- 4.2.2 Stumps are to be removed and cut away so that the top of the stump is at least 450 mm below the final topsoil level in order that the site can be reinstated in accordance with the existing site levels. Stumps are to be treated with an approved herbicide to be agreed with the Landscape Architect. Where the depth is greater than 450 mm the areas are to be backfilled with topsoil to the required level.
- 4.2.3 The removal of shrub vegetation within the existing tree root protection areas (as designated within *RCo241 / 02 / Tree Protection Drawing*) is to be undertaken by a manual method utilising hand tools only to minimise potential damage to the tree roots / tree architecture. Adjacent trees are not to be used as anchors or levers to assist in the removal of vegetation.

## 4.3 Tree Surgery

- 4.3.1 A number of trees have been scheduled for pruning or crown lifting / pruning, these comprise: T 03 / T 14 / T 15 / TG 18 / T 20 and T 21 - for further details refer to the Existing Tree Schedule.
- 4.3.2 Any significant tree defects discovered during the scheduled tree works are to be reported to the project Landscape Architect / Arboriculture Consultant. All scheduled and arising tree work will be undertaken by an approved and appropriately qualified tree surgeon in accordance with BS 3998: 2010 *Tree Work: Recommendations*. Branches in confined spaces to be removed and taken down in sections and all arisings are to be transported and disposed of away from site unless advised otherwise.

## 4.4 Protection and Retention of Existing Trees and Vegetation

- 4.4.1 Where construction works are to be carried out below tree canopies and / or within tree root protection areas, the contractor is to exercise extreme caution in order to avoid any damage to the existing tree roots and / or tree architecture.
- 4.4.2 Any excavation, cultivation and grading scheduled within the designated tree root protection areas or under tree canopies are to be carried out manually using hand tools only, with extreme care exercised at all times to avoid damaging existing tree roots / architecture.
- 4.4.3 Trees scheduled to be retained within the development site are to be protected with tree protection fencing as detailed on *RCo241 / 02 / Tree Protection Drawing* and in accordance with the guidance laid out within *BS5837-2012: Trees in Relation to Design, Demolition and Construction – Recommendations*. The fencing is to be installed prior to any construction activities. The contractor is to be responsible for the installation, protection and maintenance of the tree protection fencing as well as the areas below the tree canopies and within the tree root protection areas.
- 4.4.4 The tree protection fencing is to be 2.0m height Herras welded wire mesh fencing secured to a scaffolding framework, set into the existing ground and positioned to the outside edge of the designated Tree Root Protection Areas. The fencing should be strained and fixed to appropriate fences, walls, knee rails etc. where possible to provide a robust and completely protected area (*refer to Figures 1 and Figure 2, Section 5.0*). All tree protection fencing to be in accordance with *BS 5837-2012: 'Trees in Relation to Design, Demolition and Construction - Recommendations'* set out as specified within *RCo241 / 02 / Tree Protection Drawing*.
- 4.4.5 Day-Glo ribbons should be attached to the top of the fencing to ensure the fencing can be seen. The fencing should have all weather signs attached (*Refer to Figure 3 - Section 5.0 for example*).
- 4.4.6 All tree root protection fencing will be maintained for the full construction period and inspected and approved by a nominated individual prior to the commencement of any construction site activities. If the tree root protection fencing requires repositioning during the course of the construction programme, prior notification and agreement must be sought by the contractor with the landscape architect.
- 4.4.7 Within the designated tree root protection areas:
- *No vehicles / machinery are to be used;*
  - *No materials / chemicals are to be stockpiled / stored;*
  - *No excavation activities. Ground levels to be maintained;*
  - *No fires are to be lit.*

- 4.4.8 At the end of the contract period the contractor shall remove all protective fencing from the development site. All existing vegetation is to be healthy and thriving at handover.

## 4.5 Manual Excavation and Demolition

- 4.5.1 Any regrading of existing ground levels should, wherever possible be limited to areas out-with tree root protection areas. Where existing ground levels are to be regraded within tree root protection areas, any excavation should be undertaken manually and with hand tools only. (Air spades may be employed in order to clear topsoil). Individual tree roots and root clumps measuring >25mm must not be severed without seeking specialist arboriculture advice. Roots measuring <25mm may be cleanly severed using specialist hand tools only and to the absolute minimum extent. Any roots which are exposed should be immediately covered with hessian sacking and backfilled with existing topsoil or appropriate granular fill (non-injurious to tree roots) as soon as possible in order to minimise and limit drying and desiccation.

## 4.6 No Dig Construction

- 4.6.1 The proposed access drive is to be constructed using a 'No Dig' construction method. The designated area is to be protected with geocell tree protection cellular confinement system and installed as per manufacturers guidelines. Excavation is to be limited to the removal of loose surface material / herb layer and carried out with a manual excavation method only with all existing ground levels to be maintained.
- 4.6.2 A heavy-duty, permeable separation membrane is to be laid prior to the installation of the geo grid and decorative aggregate fill, at the base of the construction. The mesh is to be fixed according to the manufacturers specification and filled with ornamental, permeable aggregate. Edges to the proposed geo grid are to be restrained with timber boards / sleepers of sufficient depth and width which are to be fixed with steel pins / timber stakes.

## 4.7 Proposed Foundation Design

- 4.7.1 Foundations for the proposed extensions (within designated tree root protection areas) are to be designed to minimise impact (excavation) on existing tree roots and to be with the use of mini piles. All piling operations are to be carried out following the localised removal of the top 500mm of topsoil by hand using manual tools only to ensure impact on existing roots is minimised. Existing levels are to be maintained outwith of the piled areas with a ring beam to be constructed above existing ground level.

- 4.7.2 No machinery (tracked / wheeled vehicles) is to be deployed within soft or unmade ground.

## 4.8 Localised Regrading

- 4.8.1 Any localised regading within tree root protection areas is to be carried out by hand with any disparity in ground levels to be made good with topsoil and subsequently grass seeded.

## 4.9 Proposed Fencing

- 4.9.1 All proposed fence posts within designated Tree Root Protection Areas are to be installed by hand digging with manual tools only. No machinery and no tracked vehicles are to be used within designated Tree Root Protection areas.

## 4.10 Service Routes / Trenches

- 4.10.1 Wherever possible proposed service routes (cables, pipes, service runs etc) should be located outwith of tree root protection areas. Where site constraints dictate this is not possible, the service route should be designed so as to minimise the impact to the existing tree root protection area ie routed in the most direct route to and from the exterior of the radius root protection area and minimising the length of the run. Service trenches within tree root protection areas should be excavated using a manual dig method with hand tools only and routed through tree roots via a ducting sleeve. Service runs should, wherever possible be combined in order to minimise the impact on existing tree roots and not within 1.0m of the tree trunk.
- 4.10.2 Individual tree roots and root clumps measuring >25mm must not be severed without seeking specialist arboriculture advice. Roots measuring <25mm may be severed using specialist hand tools only and to the absolute minimum extent to allow the facilitation of the service route - wherever possible tree roots must be left intact in order to ensure the long term viability of the tree root system. Exposed routes should be immediately wrapped in dry hessian sacking or coconut matting in order to prevent drying and as a temporary measure can be surrounded with a loose granular fill prior to backfilling with the excavated topsoil. Tree roots >25mm, which are not required to be severed, may be carefully retained and protected with washed sharp sand, prior to backfilling with topsoil.
- 4.10.3 In some instances, trenchless insertion methods may be employed in order to facilitate service runs through root protection areas. In such cases the entry and retrieval pits should be located outside of the designated root protection areas and the run should be located below 750mm from the existing ground level in order to limit the potential damage to existing tree roots.

## 4.11 Lifting of Existing Hard Surfaced Areas

- 4.11.1 The removal of any existing hard surface layer within the tree root protection areas should be undertaken taking care to ensure the existing tree roots remain undamaged. Any operations should be undertaken manually and with hand tools (suitable machinery may be used in consultation with the landscape architect) and should be accomplished by working backwards to ensure the resulting, exposed ground is not compacted.

## 4.12 Demolition of Structures

- 4.12.1 Trees close to structures which are scheduled to be demolished within RPAs should be selectively pruned (Tying back branches to achieve a clear working space should also be considered as an alternative) in order to prevent accidental damage. Movement of machinery should be restricted to areas outside of the RPA, areas with ground protection or from within the existing building footprint. Where trees are in close proximity to structures they should be demolished using a '*top down pull back*' method. Any below ground structures within existing Tree RPAs (eg foundations) should be left in situ to prevent accidental damage to tree roots.

## 4.13 Herbicides

- 4.13.1 Any herbicides which are to be used within the vicinity of existing trees and particularly within designated RPAs should be an appropriate product for the vegetation which is intended to be removed and all instructions and guidance from the manufacturers are to be strictly observed. The following guidance / legislation may be pertinent;
- *Control of Pesticides Regulations 1986;*
  - *The Control of Pesticides Regulations (Amended 2012);*
  - *Control of Substances Hazardous to Health Regulations 1994;*
  - *HSE Publication 257 (2013);*
  - *Pesticides Safety Directive ([www.pesticides.gov.uk](http://www.pesticides.gov.uk)).*

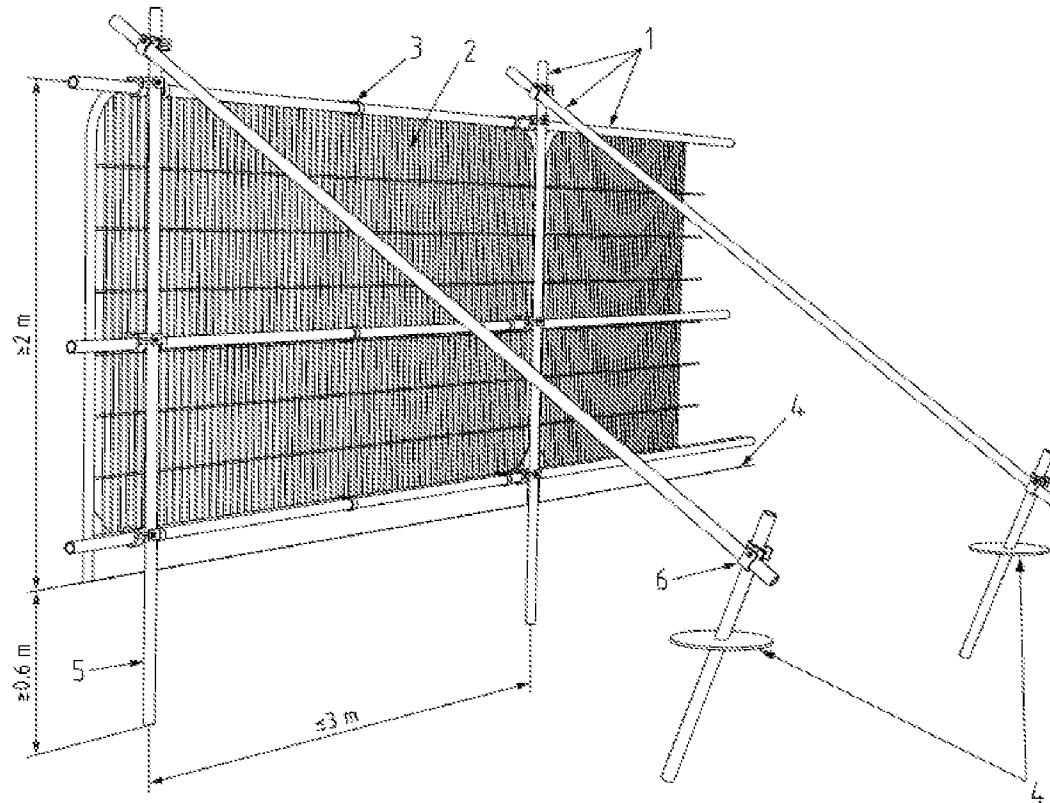
## 4.14 General Notes

- 4.14.1 The guidance and principles within *BS5837: 2012 - Trees In Relation to Design, Demolition and Construction – Recommendations* are to be followed at all times to prevent undue damage and / or stress on the tree root systems of trees within and adjacent to the proposed development site.
- 4.14.2 The integrity of the existing soil structures are fundamental to the long term health and viability of trees and therefore soil compaction, excavation and contamination is to be avoided at all times within the RPAs. Great care is to be taken to avoid damage to tree roots, stems, boles, branches and canopies.

- 4.14.3 All tree protection measures are to be carried out on site in accordance with the relevant drawings and schedules which accompany this method statement.

## 5.0 FIGURES

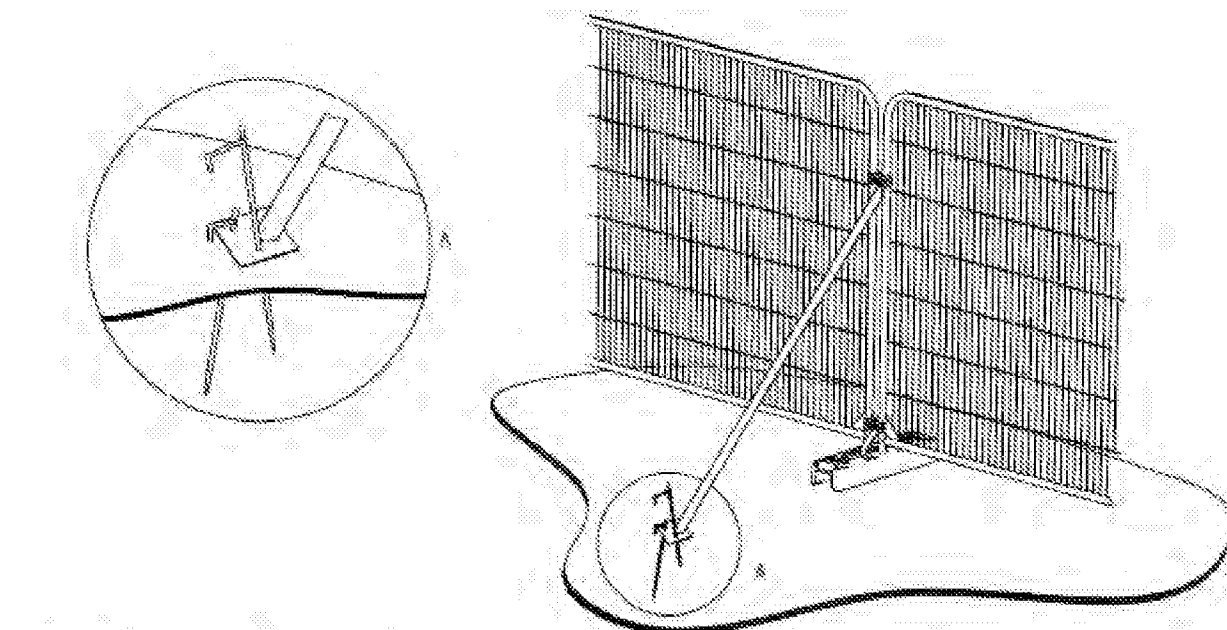
Figure 01. Tree Protective Fencing. Default specification for protective barrier  
(© The British Standards Institution 2012)



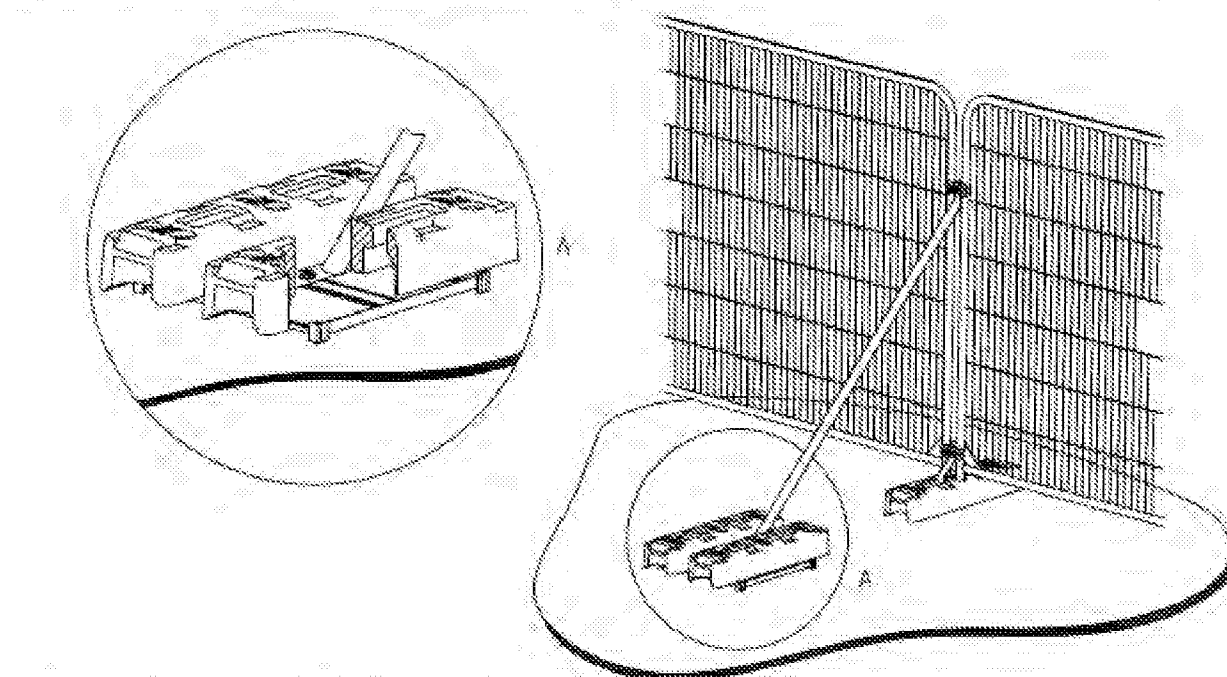
### Key

- 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

Figure 02. Tree Protective Fencing Support - Alternative support specification for protective barrier.  
(© The British Standards Institution 2012)



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Figure 03. Tree Protection Fencing - Signage

# **TREE PROTECTION ZONE KEEP OUT**

**TREES ENCLOSED BY THIS FENCING ARE PROTECTED BY  
PLANNING CONDITIONS  
(Town & Country Planning Act 1990)**

**THE FOLLOWING MUST BE OBSERVED AT ALL TIMES;**

- **TREE PROTECTION FENCING MUST NOT BE REMOVED OR ALTERED**
- **NO PERSONS SHALL ENTER THE PROTECTED AREA**
- **NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA**
- **NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA**
- **NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA**
- **NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA**

**ANY INCURSION WITHIN THE PROTECTED AREA MUST BE WITH THE WRITTEN  
APPROVAL OF THE LOCAL PLANNING AUTHORITY**