#### Appendix 8 – Tree and Ground Protection Specification

#### BS 5837:2012 **BRITISH STANDARD**

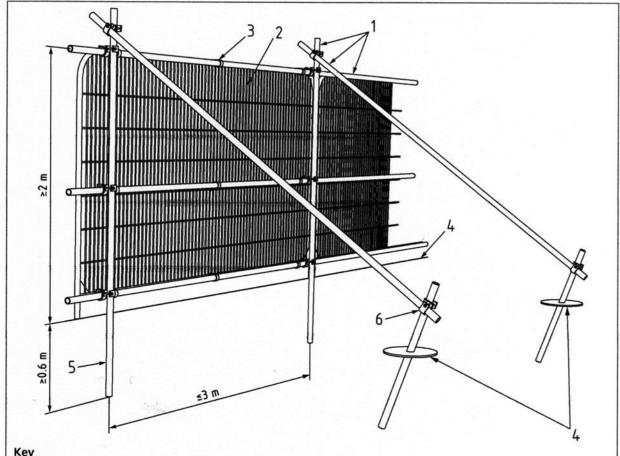
on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

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".

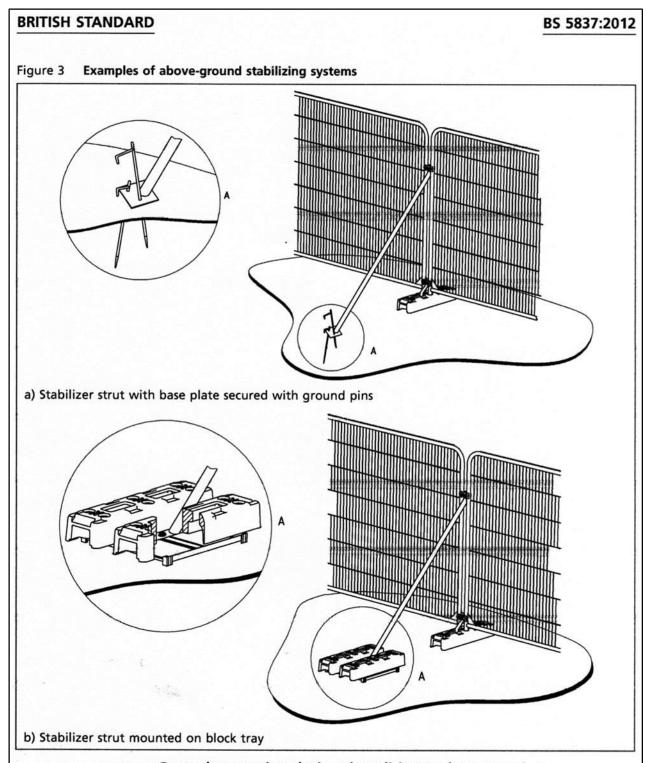
Figure 2 Default specification for protective barrier



#### Key

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

27 | Page D1003161311



#### 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.

D1003161311 28 | Page

#### Suggested protective fencing warning sign format



# TREE PROTECTION AREA KEEP OUT

(TOWN & COUNTRY PLANNING ACT 1990)

THE VEGETATION PROTECTED BY THIS FENCE IS
PROTECTED BY PLANNING CONDITIONS AND/OR IS THE
SUBJECT OF A TREE PRESERVATION ORDER.

### IF YOU REQUIRE ACCESS INTO THIS AREA PLEASE CONTACT

planningES@UK.Innovation-Group.com

T: +44 (0)330 380 1036

D1003161311 29 | Page

#### Appendix 9 – Temporary Ground Protection Specification

BS5837 recognizes that incursions in to the construction inclusion zones will be required at times during some developments.

## The objective is to minimize soil compaction

**Example 1** - for pedestrian movements only, a single thickness of scaffold boards places 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.) 100mm depth of woodchip), laid on to a geotextile membrane.

**Example 2** - 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. 150mm depth of woodchip), laid onto a geotextile membrane;

**Example 3** - 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 conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

#### WOODEN BOARDING/TRACK-WAY

WOODCHIP 100mm-200mm

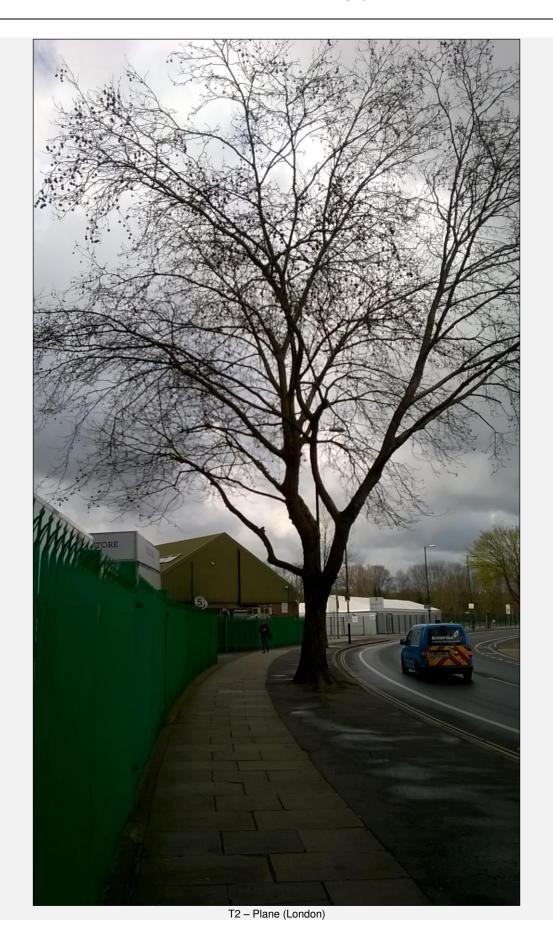
**GEOTEXTILE MEMBRANE** 

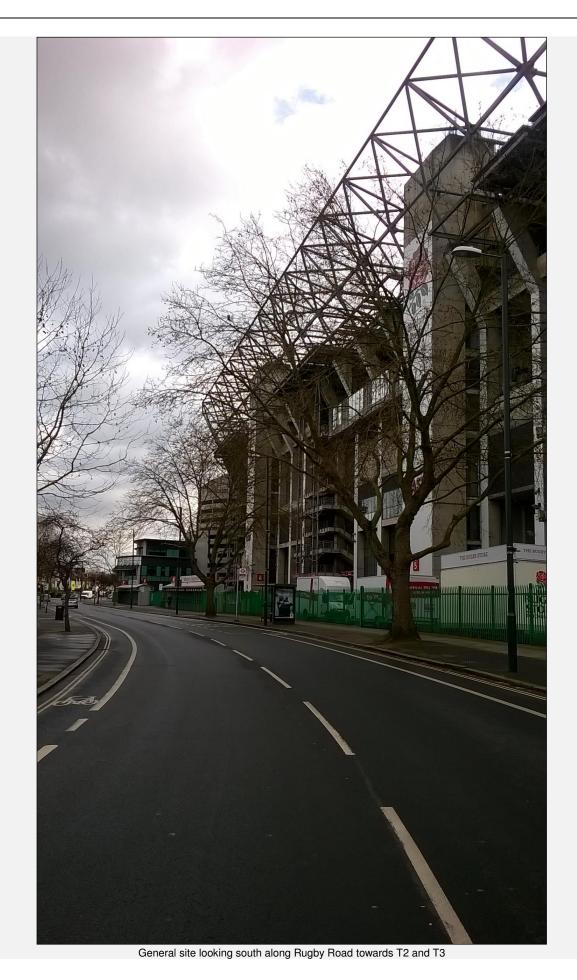
**D1003161311** 30 | Page

## Appendix 10 - Photographs



Large buttress roots and associated pavement damage observed near T2 – Plane (London)







Location of T3 - Plane (London) opposite entrance gate; note visible surface roots, pavement damage and potential trip hazard.



Newly planted trees on adjacent side of Rugby Road



General Site Looking South towards Whitton Road with T6 on the left



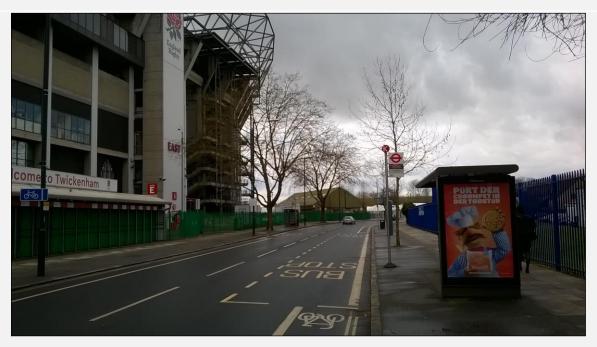
T5 – Apple (Crab)



T1 - Plane (London)



T3 – Maple (Norway)



General Site Looking North towards T1 and T2

# Arboricultural Impact Assessment Twickenham Stadium RFU (Rugby Football Union)



T6 - Plane (London)