Appendix 1 Tree Schedule

Site: Land adjacent to Old Hive, Church Raike, Chipping

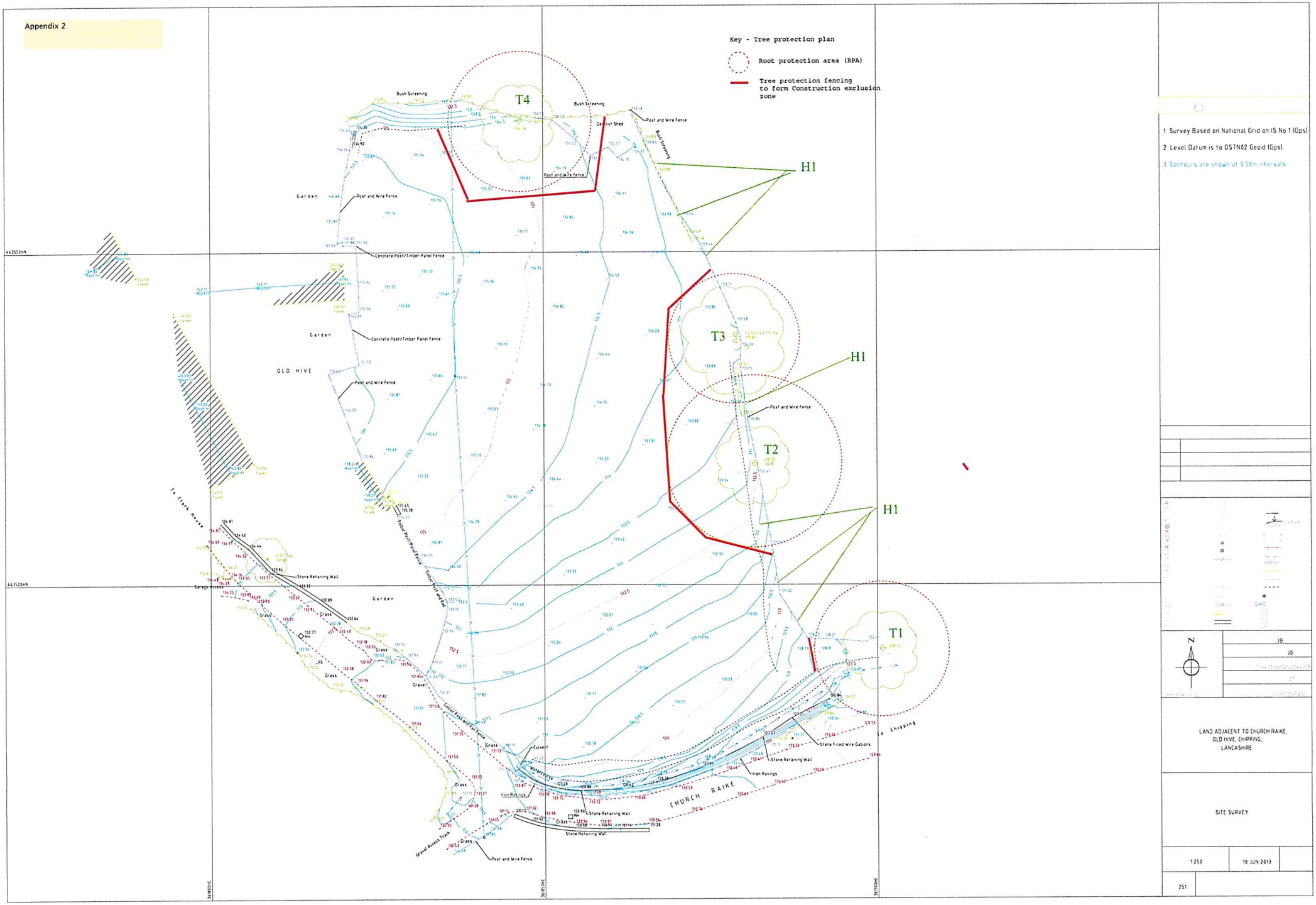
Tree Ref.	Species	Height (m) (est)	Spread (m) (est) NSEW	DBH (mm)	Age class	Phys. cond.	Structural condition	Preliminary management recommendations	Retention catagory
T1	Sycamore *Acer pseudoplatanus*	22	6.6.6.6.	904	Mature	Good	Main stem divides at 2m. Included bark union. Well developed "ears" providing strength (appendix 3)	Monitor included bark union regularly	A2
T2	Lime *Tilia x europaea*	18	7.7.5.4.	1140	Mature	Good	Main stem divides at 1.7m. Epicormic growth in crown consistent with species (appendix 3)	None required	A2
T3	Sycamore *Acer pseudoplatanus*	18	5.7.4.3.	S1 = 742 S2= 700	Mature	Good	Twin stem. Nothern most stem leaning in a NE direction (appendix 3). Evidence of good reaction wood. Small amount of deadwood in crown	Crown clean to remove single hanging branch and deadwood.	A2

Tree Ref.	Species	Height (m) (est)	Spread (m) (est) NSEW	DBH (mm)	Age class	Phys. cond.	Structural condition	Preliminary management recommendations	Retention catagory
T4	Sycamore *Acer pseudoplatanus*	21	7.7.7.7.	939	Mature	Good	Main stem divides at 4m. Evidence of squirrel damage to topside of branches. 2 lower crossing branches and evidence of decay cavities from wounds. (appendix 3)	Crown clean to remove 2 lower crossing branches and deadwood. Monitor decay cavities regularly. Removal of old building materials from base.	B1
H1	Hawthorn *Cratgeus monogyna*	N/A	N/A	N/A	Over Mature	Fair	Old hedge line. Large gaps between trees. Old and many with significant decay. Trimmed with little or no growth other than at the top (appendix 3)	No longer suitable for laying. Coppice and replant with native hedging species to complete the hedgerow	U

Table 1 **Cascade chart for tree quality assessment**

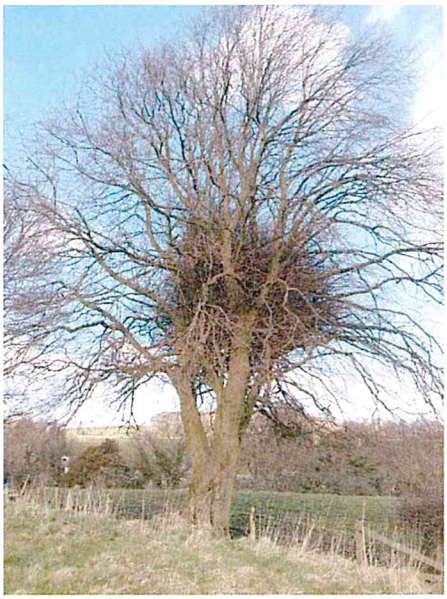
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a 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 significance 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 it might be desirable to preserve; see 4.5.7.*			See Table 2
	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)	See Table 2
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	See Table 2
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 150 mm	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 this 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	See Table 2

Appendix 2


Key - Tree protection plan
Root protection area (RPA)
Tree protection fencing to form Construction exclusion zone
T1
T2
T3
T4
H1
H1
H1
Bush Screening
Dilapidated Shed
Post and Wire Fence
Garden
Concrete Post/Timber Panel Fence
OLD HIVE
Timber Post/Wire Mesh Fence
Stone Retaining Wall
Garage Access
Grass
Gravel
Culvert
Iron Railings
Stone Filled Wire Gabions
CHURCH RAIKE
Gravel Access Track
443550mN
443520mN
1 Survey Based on National Grid on IS No 1 (Gps)
2 Level Datum is to OSTN02 Geoid (Gps).
3 Contours are shown at 0.50m intervals
JB
JB
LAND ADJACENT TO CHURCH RAIKE, OLD HIVE, CHIPPING, LANCASHIRE
SITE SURVEY
1:250
18 JUN 2013
251

Appendix 3

T1 Included union. Well developed ears



T2 Common Lime. Epicormic growth. Typical for this species

T3 Sycamore. Leaning stem away from development. Good reaction wood.

T4 Sycamore. Decay cavities from old wounds

H1 Large gaps and in generally poor condition. Over trimmed with most of the resultant growth from the tops only.

7.4.2.8 When designing the hard surface, account should be taken of finished levels in relation to adjacent structures, including damp-proof courses, garage slabs and links to existing vehicular cross-overs.

NOTE Attention is drawn to the Building Regulations 2010 [8], the Building (Scotland) Regulations 2004, as amended [9] and the Building Regulations (Northern Ireland) 2000 [10], in respect of the need for accessible thresholds.

7.4.2.9 If a permeable surface is to be used by construction traffic, this should 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).

7.4.3 Edge supports

The excavation needed for the placement of kerbs, edgings and their associated foundations and haunchings can damage tree roots. Within the RPA, this should be avoided either by the use of alternative methods of edge support or by not using supports at all.

NOTE For example, where kerbing is required for light structures, such as footpaths, above-ground peg and board edging might be acceptable. Where areas of hard surface require edge support, the use of sleepers (pinned in place where required), gabions or other non-invasive ground-contact structures, including the use of proprietary products, can provide appropriate solutions.

7.4.4 Precautions

7.4.4.1 The soil structure including the area beneath the proposed new hard surface should be protected from compaction during installation. This may be achieved by:

a) the use of temporary ground protection in accordance with **6.2.3** to safeguard the working area;

b) constructing the new surface with machinery working forward from the surface as it is constructed (known as "rolling out").

7.4.4.2 Where a herbicide is used to control vegetation prior to construction of hard surfacing, the manufacturer's guidance should be strictly followed and care should be taken to avoid any damaging effects on trees or other vegetation to be retained.

NOTE The use of appropriate geotextiles can provide a barrier that inhibits weed growth but allows water and gases to pass freely.

7.4.4.3 The ground should not be skimmed to establish the new hard surface at the former ground level. Loose organic matter and/or turf should be removed carefully using hand tools. The new surface should then be established above the soil.

7.4.4.4 Raising levels should be achieved by use of a granular material which remains gas- and water-permeable throughout its design life.

7.4.4.5 Due to the highly alkaline leachate produced during the curing of wet concrete, concrete should not be poured within the RPA unless an impermeable liner has been installed.

7.5 Special engineering for foundations within the RPA

7.5.1 The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would

minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer. In shrinkable soils, the foundation design should take account of the risk of indirect damage (see A.1.4).

7.5.2 Root damage can be minimized by using:

- piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm;
- beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

7.5.3 Where a slab for a minor structure (e.g. shed base) is to be formed within the RPA, it should bear on existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

7.5.4 Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should also be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take account of any effect on the load-bearing properties of underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from the building control authority prior to this approach being relied on.

7.5.5 Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for temporary ground protection given in 6.2.3. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored pile or screw pile.

7.6 Subterranean construction within the RPA

7.6.1 Where it is proposed to form subterranean structures, e.g. basement extensions, within the RPA, it is essential to avoid excavating down through rootable soil if trees are to be retained. In some cases, it might be technically possible to form the excavation by undermining the soil beneath the RPA.

7.6.2 The following factors should be taken into account, in light of site-specific and specialist arboricultural, engineering and geotechnical advice:

- the future growth potential of the tree;
- the minimum depth of overburden (i.e. that overlying the roof of the proposed structure) required for retention in situ to ensure the survival of the tree and its stability against the wind;
- the potential for vibration-induced granular flow within the retained overburden, caused by the undermining process, to destabilize the tree through reduced root adhesion;
- the mass of the tree and of the retained overburden;

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).

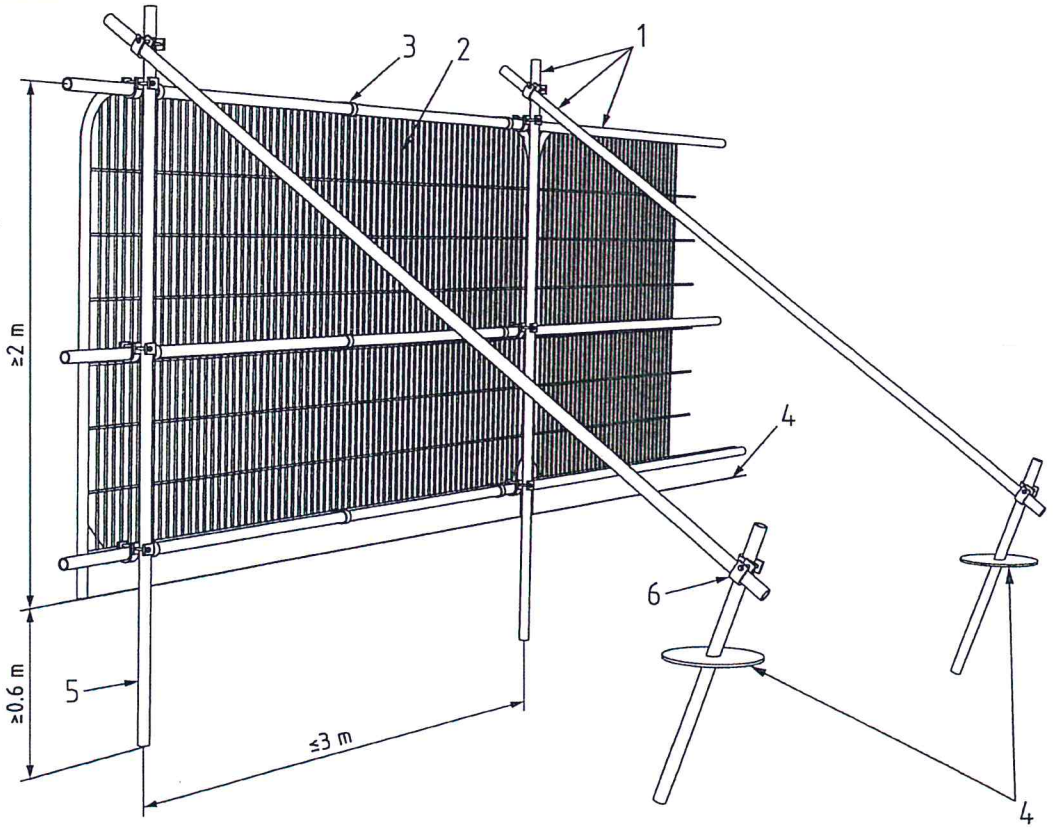
NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

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".

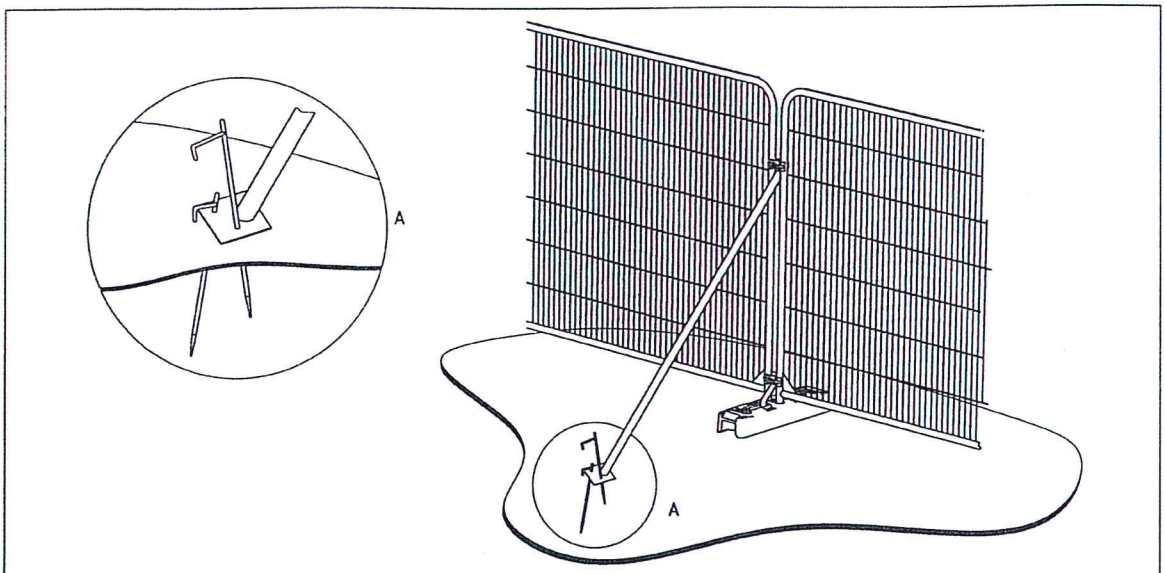
Figure 2 **Default specification for protective barrier**



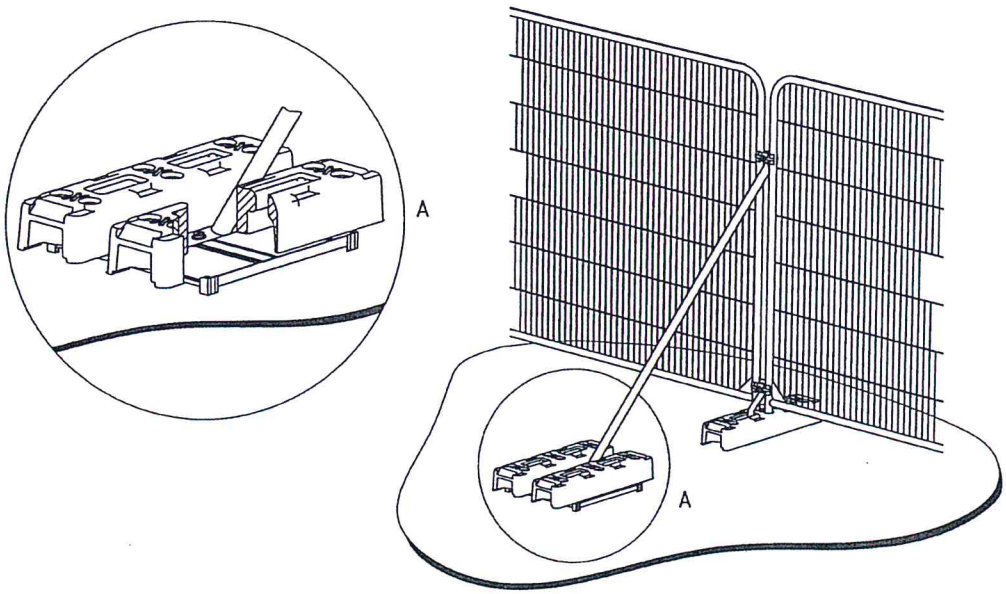
Key

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 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

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.