SJ Stephens Associates

ARBORICULTURAL, LANDSCAPE & MANAGEMENT CONSULTANTS

Savernake Barn
Stokke Common
Great Bedwyn
Marlborough
Wiltshire SN8 3LL
Tel: 01672 871 862
www.sjstephens.co.uk
e: info@sjstephens.co.uk

Arboricultural Impact Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

At:-

1 East Heath Road
Hampstead
London
NW3 1BN

On behalf of:-

Mr Richard Glynn
c/o David Scott Architects
29 Sarre Road
London
NW2 3SN

Prepared by:

Simon Stephens MA Oxon, Dip Arb(RFS), MArborA, C Env. MICFor
Email: simon@sjstephens.co.uk

Survey Date: 20th May 2016
Report Date: 28th June 2017
Project no: 895

CONTENTS

1 BACKGROUND

1.1 This Arboricultural Impact Assessment relates to the proposed construction of a single storey extension, and provides recommendations for the management of trees on the site. It has been instructed by the owner.

1.2 The tree survey was undertaken, and this report has been prepared, by Simon Stephens MA Oxon, Dip Arb (RFS), MArborA, C Env, MICFor a Registered Consultant with the Arboricultural Association, with over 20 years relevant experience.

1.3 This survey and report have been prepared in accordance with recommendations provided in BS 5837:2012, Trees in relation to design, demolition and construction - Recommendations.

1.4 Documentation supplied:

- David Scott Architects, Proposed Site Plan, drawing no: PRO 01

2 SURVEY DETAILS AND SCOPE

2.1 The site survey included trees and shrubs, within influencing distance of the proposed development, with a stem diameter over 75mm at 1.5m height, located within the area shown on the plan included as Appendix A.

2.2 Tree inspection took place from ground level with the use of binoculars, sounding hammer and metal probe using the Visual Tree Assessment method (Mattheck & Breloer 1994). The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.

2.3 Tree details have been added to the plan received which is included as Appendix A. Tree locations have been taken from the topographical survey provided. Where not included on the topographical survey, they have been determined by measuring distances from features shown on the plan, using a laser measuring device. The following information was recorded for each tree, and is shown in the Tree Schedule included as Appendix B:

- **Number:** an identity number for each tree, prefixed with a "T", which cross references locations shown on the plan with the schedule in Appendix B. Where a number of trees, normally of the same species, are located close together and are similar in character and requirements, they have been treated as a Group under a single Number, prefixed with a "G".
- **Species**: common name.
- **Tree height**: approximate height in metres.
- **Stem diameter**: diameter in millimetres, taken at 1.5m above ground. Where there are a number of stems, stem diameters are recorded in the condition column.
- **Branch spread**: approximate spread in metres to N,S,W and E of the trunk. The approximate branch spread is drawn on the plan.
- **Canopy clearance**: approximate height of the canopy above ground. Where a significant, low lateral branch is present, its height and direction of growth is included in the Condition column.
- **Age class**: Young, Semi-mature, Early mature, Mature, Over-mature, Veteran.
- **Condition**: features that affect the safe useful life expectancy and amenity of the tree, including the presence of decay or any physical defect.
- **Management Recommendations**: recommendations to ensure the health and safety of the tree, within the future development.
- **Estimated Remaining Contribution**: <10 years, 5-15 years, 10-20 years, 15-30 years, 20-40 years, >40 years.
- **Category grading**: tree classification taken from BS 5837:2012, Trees in relation to design, demolition and construction (see Appendix C for details), as follows:
    - Category U: Unsuitable for retention, trees with less than 10 years life expectancy, normally recommended for removal (Red)
    - Category A: high quality trees, able to make a substantial contribution for at least 40 years. (Green)
    - Category B: moderate quality trees, able to make a significant contribution for at least 20 years. (Blue)
    - Category C: low quality, in adequate condition to remain for at least 10 years, or young trees <150mm stem diameter.(Grey/Uncoloured)

  For category A, B and C trees, a subcategory has been allocated, providing information on the reasons for selection of a specific category, as follows:
    - Subcategory 1: mainly arboricultural values.

    - Subcategory 2: mainly landscape values.
    - Subcategory 3: mainly cultural values, including conservation.
- Trees have been classified irrespective of the possible proximity to future construction. The BS 5837 category is colour coded, as indicated above, on the plan included as Appendix A.
- **Protection Distance:** the protection distance in metres required to provide the Root Protection Area recommended in BS 5837, assuming a circular area centred on the tree.
- **Root Protection Area (RPA):** the area in m^2, as recommended in BS 5837, to provide sufficient rooting area to ensure tree survival and which, in most situations, should be fenced off to prevent root damage from construction activities.

3 SURVEY LIMITATIONS

3.1 No internal decay devices, or other invasive tools to assess tree condition, were used.

3.2 No soil excavation or root inspection was carried out.

3.3 This survey has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.

3.4 The tree survey has been undertaken principally for planning purposes. Although any obvious structural defects have been noted, a full Tree Hazard Assessment has not been carried out.

4 FINDINGS AND PROPOSALS

4.1 Site Overview

4.1.1 The proposal is to construct an extension to the house, where shown on the Tree Protection Plan attached as Appendix A.

4.1.2 The new extension will be close to the sycamore (T1), shown in the photos in Appendix Ei). Branches from the tree are hitting the listed building and the trunk is growing immediately adjacent to the basement wall to the house and very close to the brick retaining wall at the edge of the adjacent window recess. This wall has been damaged by the tree, having been pushed out of alignment and cracked, as shown on the photo in Appendix Eii).

4.1.3 The tree is not sustainable in this position. Structural damage to the light well has already occurred. Although damage to the upper storeys of the house could be avoided by annual pruning, as the base of the tree expands, structural damage to the basement wall is highly likely.

4.1.4 Although the tree does not need to be removed to allow construction of the extension, this project provides an opportunity for removing the tree and planting a new, large growing specimen tree further from the house, where it can grow to maturity and provide greater amenity value in the future.

4.2 Legal Protection of Trees

4.2.1 The site is within the Hampstead Conservation Area. This requires six weeks notification to be given to the Local Planning Authority of any intended tree surgery works, to allow them the option of placing a Tree Preservation Order.

4.3 Tree Work

4.3.1 Details of proposed tree works are included in the Tree Schedule included as Appendix B.

4.3.2 The sycamore, T1, is proposed for removal.

4.3.3 All tree work should be undertaken to the standards set out in BS 3998:2010 Tree work – Recommendations.

4.4 Tree and Root Protection

4.4.1 Root Protection Areas are shown for all trees in the tree schedule attached as Appendix B. They are also shown for all retained trees, as circular areas centred on the trunk, on the plan enclosed as Appendix A. This shows the distance that construction must normally be kept back from a tree, to provide the Root Protection Area recommended in BS 5837.

4.4.2 The proposed location of Tree Protection Fencing is shown on the Tree Protection Plan attached as Appendix A. This provides full protection of the Root Protection Areas of T2 and T3.

4.4.3 Tree Protection Fencing must be from weldmesh panels, at least 2m high, securely fixed, with wire or scaffold clamps, to a rigid framework. This framework must be constructed from scaffold tubes with vertical tubes, at a maximum interval of 3m and driven into the ground at least 0.6m. The structure must be well braced to resist impacts, constructed as per Figure 2 of BS 5837:2012, which is reproduced as Appendix D.

4.4.4 Notices must be fixed to the Tree Protection Fencing stating:- "Tree Protection Fencing – No construction activity to take place within this area".

4.4.5 If the Local Planning Authority require the sycamore (T1) to be retained, the extension can be constructed on a concrete pad supported by mini-piles. The york stone paving around the tree was measured on site to be 100mm thick and found to have been laid on a compacted stone sub-base of uncertain depth.

4.4.6 The existing levels could therefore be reduced, by hand, by 150mm without affecting tree roots. Having laid heavy-duty polythene, to prevent contamination, the slab would be laid at this level. To provide stability, mini-piles would be driven, having first dug the pile positions by hand to ensure no major roots are present within the top 0.6m of soil.

4.5 Bat roosts

4.5.1 The current legislation makes it a criminal offence to disturb, damage or destroy any bat roost or hibernation area. However, the tree is not considered suitable for bats to use either for hibernation or temporary roost sites. The lack of cavities, cracks, loose bark or slab ivy makes it unlikely that bats will use the tree, except possibly for foraging for food. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found.

4.6 Birds

4.6.1 The current legislation makes it a criminal offence to disturb nesting birds. The nesting season is generally assumed to be from 1st March to 31st July, however this can vary depending on species and location. During these months a careful inspection must be made before work commences and works must be postponed if active nests are found.

4.7 New specimen tree planting

4.7.1 A new feature tree must be planted to replace the sycamore. A whitebeam, *Sorbus aria Magnifica,* is proposed, planted as a 16-18cm tree grown in a container with a minimum size of 85 litres. This is a tree with a conical form that will grow well in the location and be a suitable species on the edge of the heath. A specimen with a high clear stem must be selected in the nursery. This choice of species has been agreed with the Tree Officer at the London Borough of Camden.

4.7.2 To thrive, it is essential that an adequate rooting volume is allowed. A 1.7m by 4m by 1.0m deep planting pit must therefore be excavated. Structural cells must be used to prevent soil compaction, while allowing hard surfacing to be laid over the top. Silva Cells (www.deeproot.com), Stratacells (www.greenleaftrees.com), or a similar approved product must be used, constructed to manufacturers recommendations and filled with imported loam soil. Hard surfacing can be laid over the tree pit up to the edge of the tree grille, providing it is of permeable construction.

4.7.3 The tree must be double staked with suitable bollards positioned to protect from vehicle damage. An irrigation system must also be included.

4.7.4 Planting must be carried out during the first planting season (December to March) after the start of construction of the extension. Should the tree die within 5 years of planting it must be replaced, on a like for like basis, during the next planting season.

4.7.5 The quality of nursery stock, tree pit design and installation as well as aftercare must all comply with the relevant sections of BS8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

5 ARBORICULTURAL IMPACT ASSESSMENT

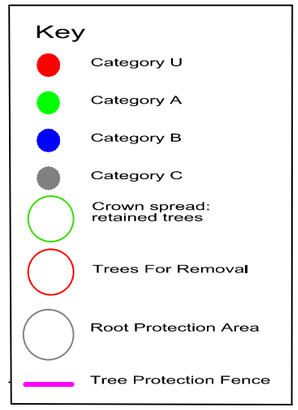
5.1 As detailed in section 4.4.5 and 4.4.6 above, it would be possible to build the proposed extension while retaining the sycamore, T1. However, growing so close to a listed building, this tree is very likely to cause damage to existing structures in the future and will not be able to grow to maturity. The tree is, therefore, proposed for removal and a new specimen tree planted instead.

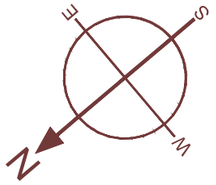
5.2 The sycamore (T1) is currently providing some amenity value, although due to the proximity of the building it has an asymmetric crown and poor structure.

5.3 The new replacement whitebeam will be planted as a 16-18cm girth, extra heavy standard, with a likely planting height of around 5-6m. It will be planted in a large 1.7m by 4m planting pit to encourage rapid growth. It will be planted closer to the road where it will have greater public visibility. In this position, unlike the sycamore, the new tree will be able to grow to maturity where it will provide high amenity value.

5.4 Thus, although there may be some adverse short-term arboricultural impact when the sycamore is first removed, within 2-3 years this will be outweighed by the amenity benefit of the new tree. In addition, this approach removes inevitable future problems regarding structural damage to the listed building likely to be caused by the sycamore, if it were to be retained.

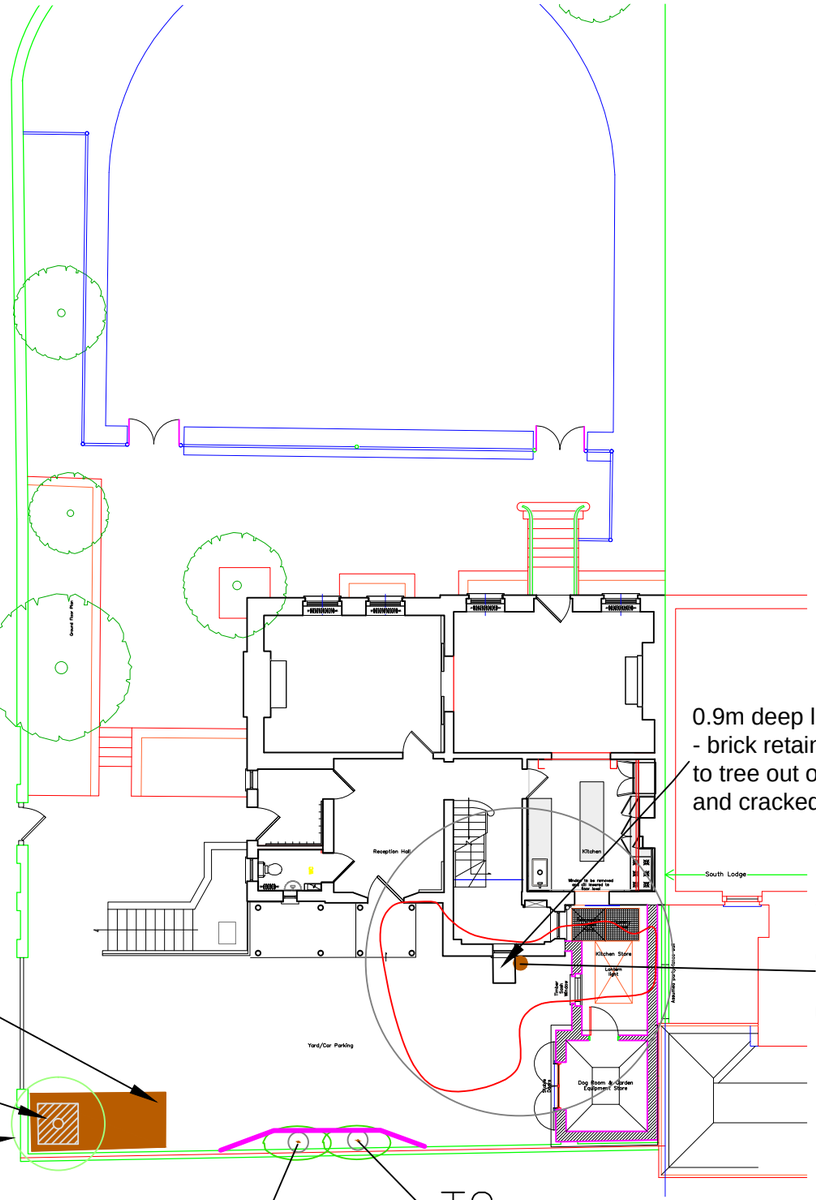
APPENDIX A





Scale

0 5m 10m



0.9m deep light well
- brick retaining wall adjacent to tree out of alignment and cracked

T1
Sycamore
C2

1.7m by 4.0m by 900mm deep tree pit, using structural cells to prevent soil compaction but allow hard, permeable surfacing

1.2m by 1.2m tree grille

Specimen tree
- Sorbus aria Magnifica (Whitebeam)

T2
Photinia
C2

T3
Photinia
C2

SJ Stephens Associates
Savernake Barn, Stokke Common
Great Bedwyn
Marlborough
Wiltshire SN8 3LL
01672 871862
www.sjstephens.co.uk

JOB TITLE
1 EAST HEATH ROAD
HAMPSTEAD

DRAWING TITLE
TREE PROTECTION PLAN

DRAWING NUMBER	REV
895–01	A

REVISIONS

SCALE	DATE	DRAWN BY
1:200 at A3	JUN 17	sjss

Tree/ Group No.	Species	Height (m)	Stem Diam. at 1.5m (mm)	Branch Spread (m)				Canopy Clearance (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protection Distnce (m)	Root Protect. Area (m2)
				N	S	E	W								
T1	Sycamore	11.5	380	4	3	4	4	3.8	Early mature	Three-way fork at approx 3.5m. Growing immediately adjacent to basement wall and to window recess. Flank wall to window recess pushed out of alignment and cracking. Likely to cause damage to building. Branches growing against and over house. Good vigour. Scars to main stem on either side of trunk at 1-2m, showing past cracking, but now callused. Previously reduced.	Remove and grind stump	10-20	C2	4.6	65
T2	Photinia	3	25	1	1	0.5	0.5	1.9	Young	Pleached tree.		15-30	C2	0.3	0
T3	Photinia	3	25	1	1	0.5	0.5	1.9	Young	Pleached tree.		15-30	C2	0.3	0

BS 5837:2012, Table 1 Cascade chart for tree quality assessment

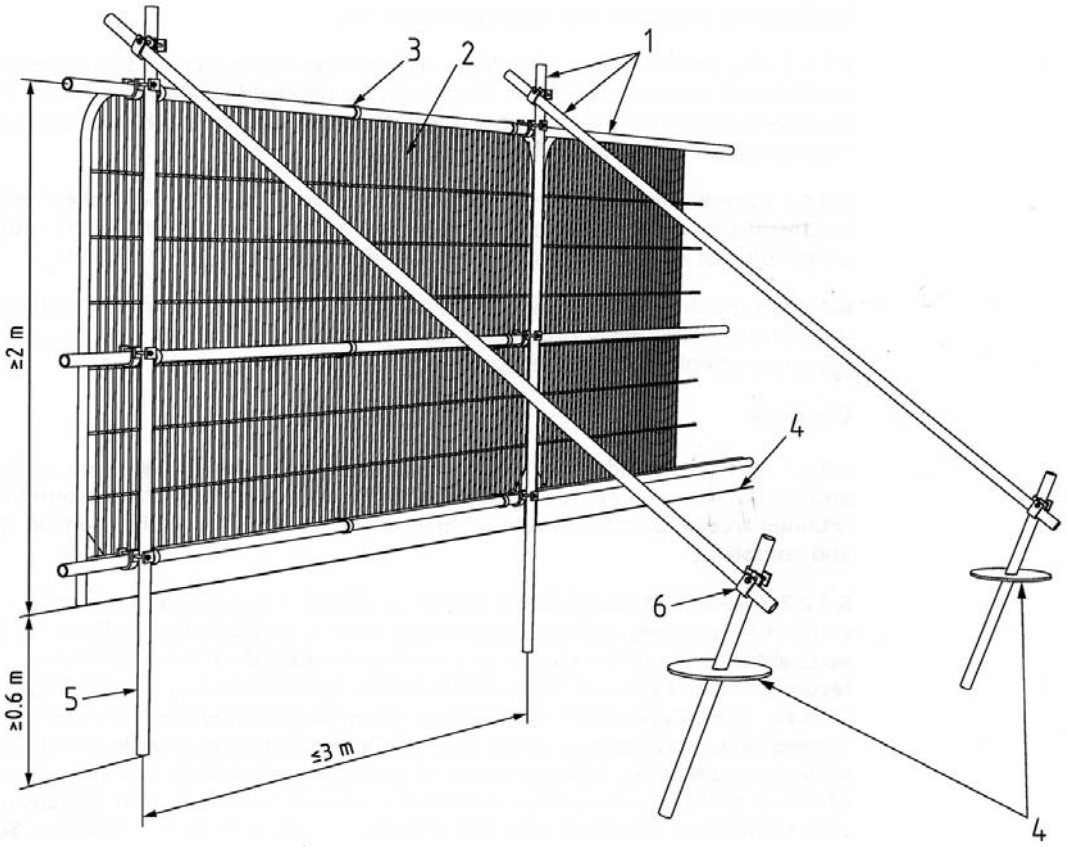
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 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

Default specification for protective barrier

Figure 2

Key

1. Standard scaffold poles
2. Heavy gauge 2 m galvanised 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



Examples of above-ground stabilising systems

Figure 3a

Stabiliser strut with base plate secured with ground pins

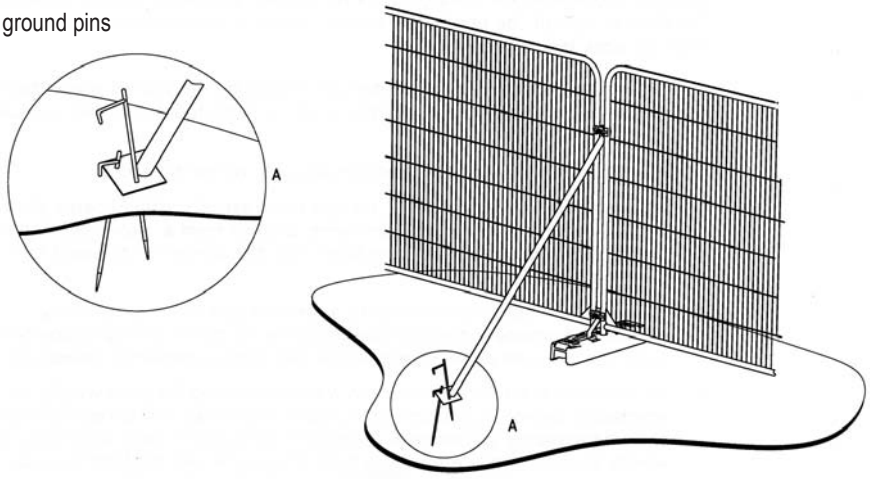
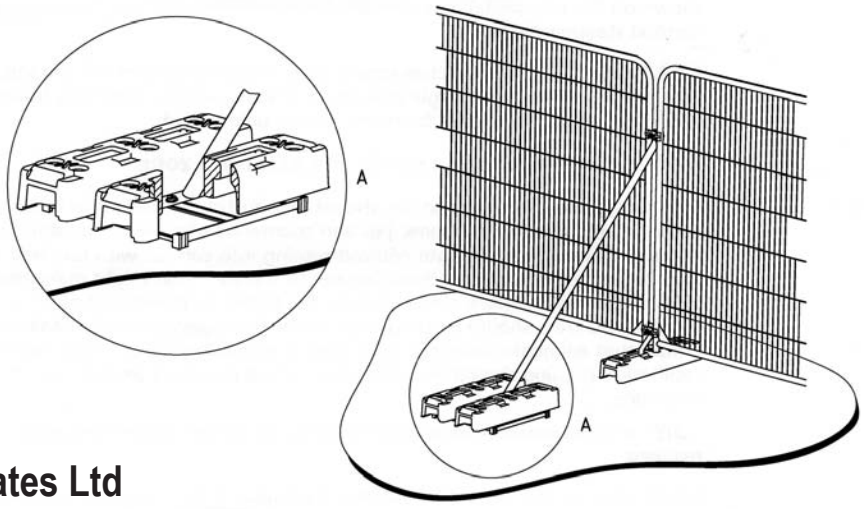


Figure 3b

Stabiliser strut mounted on block tray



T1


Retaining wall pushed out of alignment and cracked
Stem of T1, growing against basement wall