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Arboricultural Impact Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

For:-

A Pool Building and Glazed Link

At:-

Meadow House Winkfield Row Bracknell RG42 6NG

On behalf of:-

Martin Birch Meadow House Winkfield Row Bracknell RG42 6NG

Prepared by:

Simon Stephens MA Oxon, Dip Arb(RFS), MArborA, C Env. MICFor

Email:

Survey Date: 12th January 2024 Report Date: 14th February 2024

Project no: 2209

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1 BACKGROUND

- 1.1 This Arboricultural Impact Assessment has been instructed by Martin Birch to specify tree protection measures and assess the arboricultural impact of the proposed construction of a new pool building and a glazed link at Meadow House.
- 1.2 Trees were surveyed, with findings shown in the Tree Schedule in Appendix B and plotted on the Tree Protection Plan in Appendix A. This also shows tree protection measures, which are specified in the Arboricultural Method Statement in section 5 below. The arboricultural impact is assessed in section 6, which assumes that these measures are followed.
- 1.3 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.
- **1.4** This survey and report have been prepared in accordance with the recommendations of BS 5837:2012, Trees in relation to design, demolition and construction Recommendations.
- **1.5** Documentation supplied:
 - Colony Architects, Proposed Site Plan: drawing no 963-02-01

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, as shown located on the Tree Protection 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 diameters were measured using a girthing tape and tree heights were measured using a hypsometer. Where use of a tape was restricted by site factors, diameters were estimated, with the diameter recorded in the tree schedule as eq "est 300".
- 2.4 At the time of the survey, the weather was overcast, but with no restrictions to visibility.

 Broadleaf trees were not in leaf. There were no limitations to access around the trees within the site.
- 2.5 The suitability of trees for inclusion in the site was considered, in particular considering the safe useful life expectancy, and sustainability, of trees on the site after development is completed.
- 2.6 Tree details are shown on the Tree Protection Plan 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 are located close together and are similar in character and management 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,E and W 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, normally retained unless there is an over-riding reason for removal and appropriate mitigation. (Green)
 - Category B: moderate quality trees, able to make a significant contribution for at least 20 years, normally retained. (Blue)
 - Category B/C: an intermediate category between categories B and C (not specifically described in BS5837). Trees, which should be retained wherever possible, providing retention does not unreasonably constrain the layout. (Blue)
 - Category C: low quality, in adequate condition to remain for at least 10 years, or young trees <150mm stem diameter. Trees which can be removed to allow the desired layout or new planting. (Grey)

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 m², 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 for planning purposes. Although any obvious structural defects have been noted, a Tree Hazard Assessment has not been carried out. Mature trees close to highly populated areas or public highways should normally be checked for safety annually, by a suitably qualified person.

4 LEGAL PROTECTION OF TREES

- 4.1 The Bracknell Forest District Council website was viewed on 14-02-2024, showing that the site does not contain any Tree Preservation Orders. There is a Conservation Area which covers the drive into the property and adjacent properties to the south, east and west. The presence of Planning Conditions currently attached to the site, was not checked.
- **4.2** For any trees in a Conservation Area, six weeks notification must 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 Once planning permission has been granted, provided the application clearly shows any trees to be removed or pruned, this overrides protection provided by Tree Preservation Orders or Conservation Areas, provided the work is necessary to implement the approved development. If not essential, a separate tree work application will need to be submitted for trees protected by a Tree Preservation Order.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Site Overview

- 5.1.1 The proposal is for the demolition of an existing outbuilding and construction of a new pool building, connected to the existing house by a glazed link. The proposed site plan is included as Appendix F and has is shown, along with tree details, on the Tree Protection Plan attached as Appendix A.
- 5.1.2 There is an impressive, mature Silver maple (T1) adjacent to the site in a central location on the lawn.
- 5.1.3 There is also a line of willow (T2-T7) which have grown at close spacing and have been drawn up. Three of them have recently been topped to reduce the risk of windthrow. T4 is leaning and T5 is leaning at an acute angle over the neighbouring property with signs of root plate movement. Similar trees further down the garden have recently been wind blown. Removal of all 6 trees is recommended to reduce risk and allow new tree planting.

5.1.4 Photos of trees are included in Appendix E.

5.2 Tree Work

- 5.2.1 Details of proposed tree works are included in the Tree Schedule included as Appendix B.
- 5.2.2 Seven trees are proposed for removal, as detailed in section 6.1 below.
- 5.2.3 All tree work must be undertaken to the standards set out in BS 3998:2010 Tree work Recommendations.

5.3 Root Protection Areas

5.3.1 Root Protection Areas are shown for all trees in the tree schedule included as Appendix B. They are also shown for all retained trees, as circular areas centred on the trunk, on the Tree Protection Plan included as Appendix A. Where there are physical obstructions to root growth the Root Protection Area should be shown as an equivalent area that is more likely to reflect actual root growth. The Root Protection Area shows the area around a tree in which all construction activity must normally be excluded, unless appropriate protection measures are implemented.

5.4 Tree Protection Fencing

- 5.4.1 Tree Protection Fencing must be erected where shown on the Tree Protection Plan, included as Appendix A. This will provide full protection of the Root Protection Areas of all retained trees within the site, other than for:
 - areas hatched in blue on the Tree Protection Plan, where No-Dig Construction must be used, as described in section 5.5 below, to protect underlying roots.
 - areas shaded cyan on the Tree Protection Plan, indicating Ground Protection Areas, where roots must be protected, as described in section 5.6 below.
- 5.4.2 Tree works can be completed before Tree Protection Fencing is erected, however no contractors plant or vehicles must be allowed to track within the Root Protection Areas unless ground protection panels are laid.
- 5.4.3 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 BS5837:2012, which is reproduced in Appendix D. Alternatively, weldmesh panels can be supported on blocks, providing the blocks are pinned to the ground with road pins, or similar,

- and the panels are braced, as per Figure 3 of BS5837:2012, which is also reproduced in Appendix D.
- 5.4.4 After erection of Tree Protection Fencing and installation of ground protection, 2 days notice must be given to the Local Planning Authority before demolition or construction, including any ground work, starts on site.
- 5.4.5 Tree Protection Fencing must be maintained and retained for the duration of the works, or until such time as agreed in writing with the Local Planning Authority.
- 5.4.6 Weatherproof notices must be fixed to the Tree Protection Fencing, and maintained, stating:-

TREE PROTECTION AREA

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS
CONTRAVENTION MAY LEAD TO CRIMINAL PROSECUTION
THE FOLLOWING MUST BE OBSERVED BY ALL PERSONS:

- The Protection Fence must not be moved
- No person or machine must enter the area
 - No materials or spoil must be deposited
 - No excavation must be permitted

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN
PERMISSION OF THE LOCAL PLANNING AUTHORITY

5.5 No-Dig Construction Area

- 5.5.1 The No-Dig area, shown hatched blue on the Tree Protection Plan included as Appendix A, must be constructed without excavation apart from the removal of turf/organic matter, which must be carried out by hand. Excavators, dumpers and other site traffic must not be allowed to track on the No-Dig areas until roots are protected by the No-Dig surfacing or ground protection.
- 5.5.2 Engineering details must avoid localised compaction, using both a two dimensional geogrid, and a three dimensional cellular confinement system as integral components of the subbase. A typical section is shown on the Tree Protection Plan included as Appendix A. As well as being fit for purpose, the design and methodology must protect tree roots, by ensuring the following:-
 - topsoil/turf can be removed carefully by hand to a maximum of 75mm, but less if roots are found nearer the surface.
 - following leveling with soil or sand, a permeable, non-woven geotextile membrane, must be laid
 - a suitable two dimensional geogrid, such the TriAx Geogrid supplied by Tensar International (www.tensar.co.uk), or the Biaxial Geogrid supplied by Geosynthetics Ltd (www.geosyn.co.uk), must be laid over the entire area and underneath the edging.
 - pressure treated timber edging boards, supported by driven stakes must be used.

- a suitable cellular confinement system must then be laid to manufacturers instructions on top of the geogrid. Products that might be considered include Geoweb, supplied by Greenfix (www.greenfix.co.uk) or Cellweb, supplied by Geosynthetics Ltd (www.geosyn.co.uk). The depth of the system must be adequate to take the maximum axle weight, as per manufacturers guidance.
- the cellular confinement system must be filled with clean (no fines), washed angular, 20/40mm, stone to provide load support, while allowing air and moisture to permeate to the root zone.
- a further permeable, non-woven geotextile membrane, such as TreetexT300, or an alternative approved product which has similar oil trapping qualities, must be laid over the cellular confinement system.
- a porous, surfacing material, free from contaminants, must then be laid. Either sand bedding and block paving, gravel or permeable tarmac would be suitable.
- removed turf/topsoil can be used to grade surrounding ground levels.
- 5.5.3 Site traffic, including pedestrians, must not be allowed on the No-Dig area unless roots are protected by existing hard surfacing, new No-Dig surfacing or unless suitable ground protection panels are laid. Either Trakmats (supplied by the Marwood Group, www.marwoodgroup.co.uk), Groundtrax panels (see www.groundtrax.com), Ground-Guards, as supplied by Greentek (www.groundtrax.com), Ground-Guards, as supplied by Greentek (www.groundtrax.com), or a similar approved product, must be used, laid on top of a compressible layer of sand or woodchips, laid onto a geotextile. If access is only required for pedestrians, 25mm plywood or side butting scaffold boards can be laid, on top of a compressible layer of sand or woodchips, laid onto a geotextile.
- 5.5.4 No-Dig construction will result in an increase in levels. This must be fully taken account of in all other aspects of the design.

5.6 Ground Protection Area

- 5.6.1 Construction access will be between the house and the eastern boundary, where indicated on the Tree Protection Plan and on the photo in Appendix Eii).
- 5.6.2 The Ground Protection Area, which is shaded cyan on the Tree Protection Plan, contains soft areas where ground protection must be laid to protect any underlying roots.
- 5.6.3 Trakmats, as supplied by either the Marwood Group, (www.marwoodgroup.co.uk) or Ground-Guards, (www.ground-guards.co.uk) or a similar approved product, must be used, laid on a compressible layer of sand or woodchips, laid onto a geotextile, with adjacent panels held together with connectors.
- 5.6.4 Ground protection must be laid before any construction starts on site and must be maintained in good condition until all construction operations have been completed. Ground protection must be fit for purpose and be replaced with an alternative product if panels start to move or any sign of ground compaction is seen.

5.7 General measures

- 5.7.1 No construction activity whatsoever, including routing of underground services, storage of materials or on-site parking, must be allowed within Root Protection Areas, other than that specifically described above.
- 5.7.2 No mixing or storage of cement, concrete, oil, fuel, bitumen or other chemicals must be permitted within 10m of the trunk of any retained trees, nor in any position where the slope of the ground could lead to contamination of the Root Protection Area.
- 5.7.3 Fires must not be lit in a position where their flames could extend to within 10m of foliage, branches or trunk.
- 5.7.4 Landscape works carried out within Root Protection Areas must be undertaken with great care so as not to damage shallow roots. Tractor mounted rotovators or other heavy mechanical cultivation must not be used within the Root Protection Areas.
- 5.7.5 If any tree shown for retention is removed, uprooted or destroyed, another tree must be planted in the same location, at a size and species to be agreed in writing with the Local Planning Authority.
- 5.7.6 A copy of this report and the Tree Protection Plan must be kept on site and must be fully understood by the Site Agent.

5.8 Bat roosts

5.8.1 The current legislation makes it a criminal offence to disturb, damage or destroy any bat roost or hibernation area. Contractors must be reminded of their responsibilities and should contact the relevant authorities if any signs of bats are found.

5.9 Birds

5.9.1 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.

5.10 Arboricultural Supervision

- 5.10.1 A qualified Arboricultural Consultant must be retained to carry out the following:
 - to liaise with the contractor, prior to construction or demolition starting on site, to ensure
 this Arboricultural Method Statement is fully understood and can be complied with in full.
 If any revisions are required, a revised Arboricultural Method Statement must be
 approved by the Local Planning Authority, prior to construction or demolition starting on
 site.
 - to inspect Tree Protection Fencing and ground protection, prior to construction or demolition starting on site.
 - as necessary, to advise on any issues at the request of the local planning authority, the developer, architect or contractor.

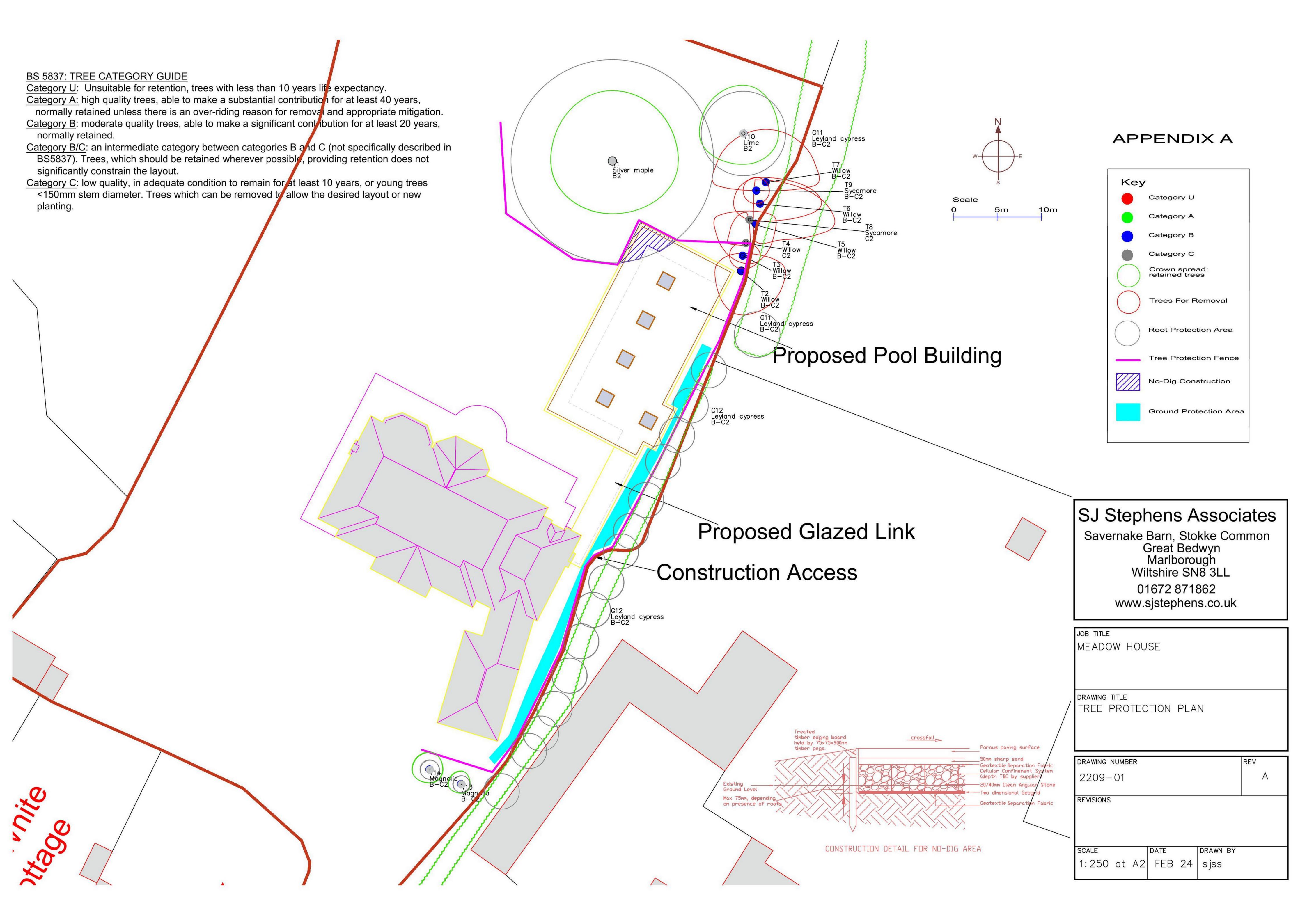
The details of each site visit must be recorded using a site visit proforma, with copies circulated to the contractor, developer and the local authority Tree Officer within 3 working days of the visit.

6 ARBORICULTURAL IMPACT ASSESSMENT

- **6.1** The following trees, categorized as per BS 5837 (see Appendix C for details), are proposed for removal:
 - Category C low quality:
 - T4 a partly wind blown willow
 - T8 a low quality semi-mature sycamore
 - Category B/C between categories B and C:
 - T2 a 13m willow with a tight fork which has recently been topped
 - o T3 a 13m drawn up willow which has recently been topped
 - T5 a leaning willow with signs of root plate movement
 - T6, T7 –25m drawn up willow, with a risk of break out or wind blow
- 6.2 No trees of any particular significance are proposed for removal and new building has been kept back from trees to provide adequate separation distances to ensure their future sustainability.
- **6.3** Protection measures have been specified to protect the Root Protection Area of all retained trees.
- 6.4 Provided the recommendations in this report are followed, the arboricultural impact of this development on existing tree cover is considered acceptable. Arboricultural supervision has been included to assist with tree protection measures and a landscape plan, including new tree planting can be conditioned.

7 REFERENCES

- BS5837:2012 Trees in relation to design, demolition and construction Recommendations.
- BS3998:2010 Tree Work. Recommendations.
- BS8545:2014 Trees: from nursery to independence in the landscape. Recommendations.
- Common sense risk management of trees (FCMS024). Published by the National Tree Safety Group (<u>www.ntsgroup.org.uk</u>)
- The use of Cellular Confinement systems near Trees: a guide to good practice Arboricultural Association Guidance Note 12.



Tree/ Group No.	Species	Height (m)	Stem Diam. at 1.5m (mm)	Branch Spread (m)				Canopy Cleara -nce (m)	Age Class	Observations	Management Recommendations	Estimated Remaining Contribution (years)	BS 5837 Category Grading	Protect -ion Distnce (m)	Root Protect. Area (m2)
				N	S	E	W								ľ
T1	Silver maple	26	960	8	6	7.5	7	1.9	Mature	Multiple upright stems from 2m. Good crown shape and vigour.		20-40	В2	11.5	417
T2	Willow	13	930	2	5	5	3	3.5	Mature	Bifurcates at 1.7m. Recently topped at 13m. Tight fork.	Remove	20-40	B-C2	11.2	391
Т3	Willow	13	540	1.5	1.5	2	1.5	3.5	Mature	Recently topped at 13m. Drawn up.	Remove	20-40	B-C2	6.5	132
T4	Willow	13	500	3.5	0	0.5	2	3	Mature	Recently topped at 13m. Leaning to north - signs of root plate movement.	Remove	5-15	C2	6.0	113
T5	Willow	14.5	800	5	2	9	0	2	Mature	Leaning at an acute angle to north east - signs of root plate movement.	Remove	20-40	B-C2	9.6	289
Т6	Willow	25	450	3	2	7	3	7	Mature	Drawn up.	Remove	15-30	B-C2	5.4	92
T7	Willow	25	600	6	1	6	6	4	Mature	Better developed crown.	Remove	15-30	B-C2	7.2	163
Т8	Sycamore	11.5	320	1	5	3	4	2.5	Semi Mature	Bifurcates at 1m - various cavities. Low quality.	Remove	5-15	C2	3.8	46
Т9	Sycamore	11.5	200	1.5	1.5	1.5	1.5	1.6	Semi Mature	Drawn up. Leader dead.		15-30	B-C2	2.4	18
T10	Lime	12.5	400	5.5	3.5	4	5	1.7	Early mature			>40	B2	4.8	72
G11	Leyland cypress	6-9	75-220					0.6	Early mature	Growing in adjacent site. Unpruned. Providing screening.		20-40	B-C2	2.6	22
G12	Leyland cypress	5-6	100-230					0	Early mature	Growing. Tightly pruned within site - lateral branches in adjacent site allowed to grow. Several gaps. Providing screening.		15-30	B-C2	2.8	24
T13	Magnolia	2.5	80	1.5	1	1	1.5	0.6	Semi Mature	Good vigour		15-30	B-C2	1.0	3
T14	Magnolia	3	90	2	1.5	1.5	2	0.6	Semi Mature	Good vigour		20-40	B-C2	1.1	4

British Standard BS 5837:2012, Table 1

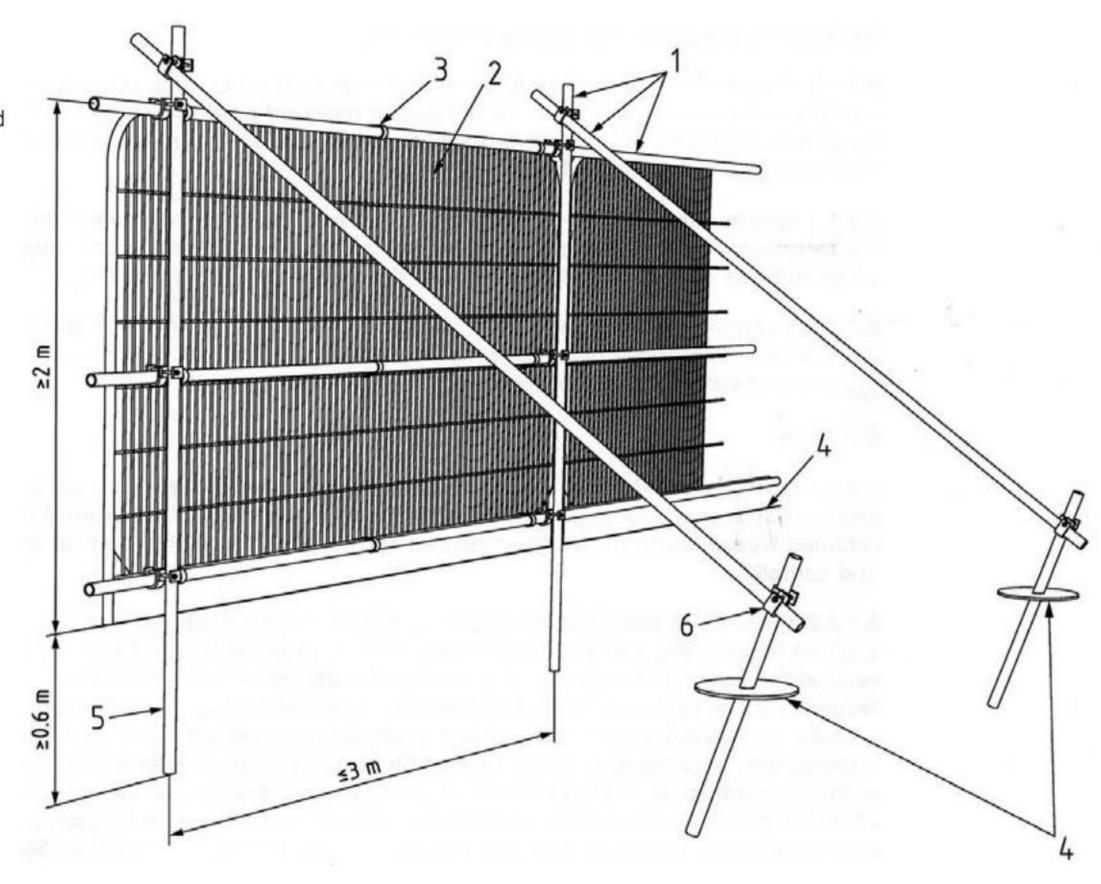
BS 5837:2012, Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)									
Trees unsuitable for retention	(see Note)									
Category U	 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) 									
Those in such a condition that they cannot realistically										
be retained as living trees in	 Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline 									
the context of the current land use for longer than 10 years	 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 									
10 years	NOTE Category U trees can have existing or potential conservation value which it 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 rete	ention									
Category A	Trees that are particularly good	Trees, groups or woodlands of particular	Trees, groups or woodlands	See Table 2						
Trees of high quality with an estimated remaining life expectancy of at least 40 years	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)	visual importance as arboricultural and/or landscape features	of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)							
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						

British Standard BS 5837:2012 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

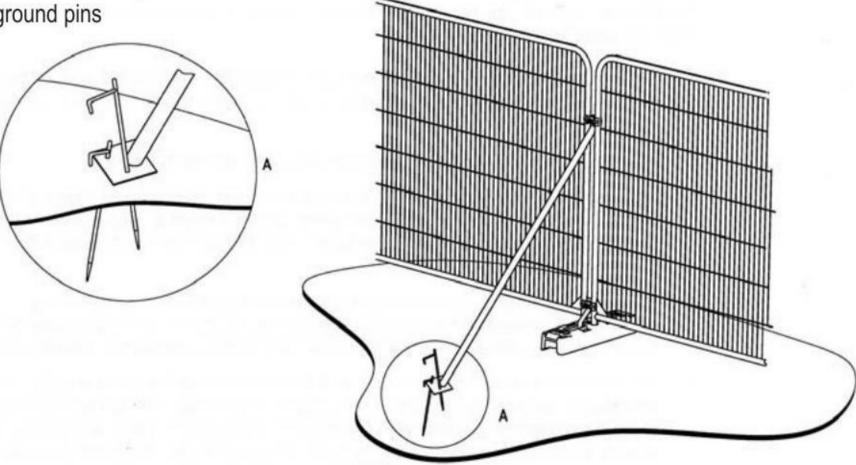
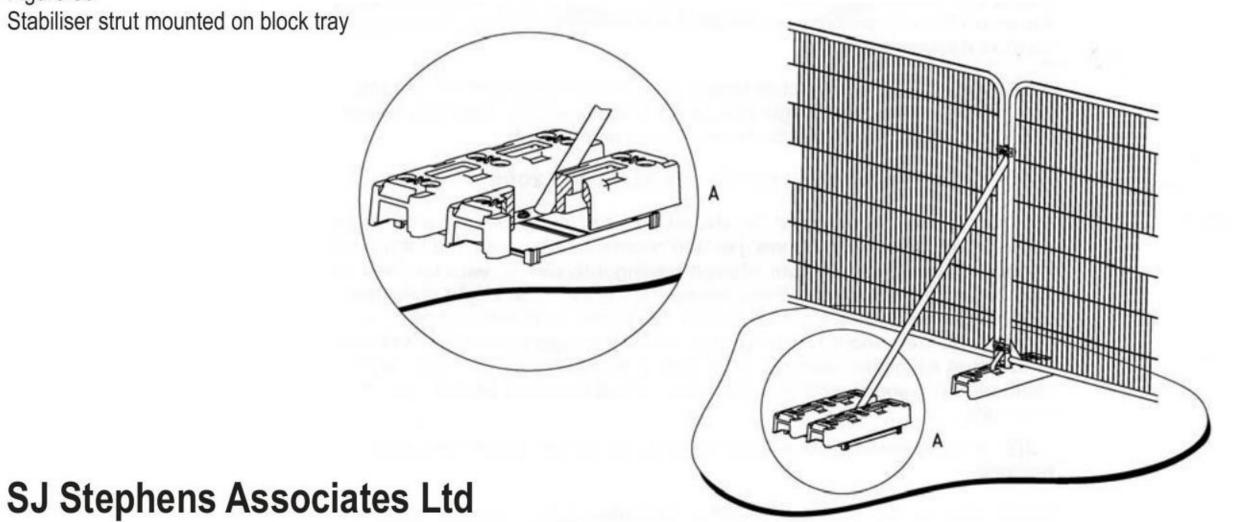


Figure 3b Stabiliser strut mounted on block tray



Appendix Ei)



Appendix Eii)



