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Arboricultural Impact Assessment

& Method Statement:

Northgate

North End Avenue

London

NW3 7HP

REPORT PREPARED FOR:

Mr & Mrs Arenson

Northgate

North End Avenue

London

NW3 7HP

REPORT PREPARED BY

James Bell

MSc. (Env). Arbor. A. Tech. Cert.

Ref: jwmb/rpt1/northgate/AIAAMS

Date: 5th May 2021

CONTENTS

1.0 Introduction

1.1 Purpose & Use of the Method Statement

1.1.1 This arboricultural impact assessment & method statement report has been prepared for submission to Camden Council (CC) to accompany a planning application for the proposed works at Northgate, North End Avenue, London, NW3 7HP, which include the replacement of the existing rear conservatories with new, more modern styles but keeping the existing footprints. Internal floor levels will be unaffected, and existing paving hard standing present between the existing conservatories and the mature copper beech (T1) will be retained untouched. This statement is intended to demonstrate the feasibility of construction without harm to the retained tree resource on and adjoining the site. See material accompanying this report for full scheme details.

1.1.2 This document lays down the methodology for any proposed works that may have an effect upon the trees on the site. It is essential within the scope of any contracts related to the development proposals that this method statement is observed and adhered to. It is recommended that this document form part of the work schedule and specification issued to the building contractors and can be used to form part of the contract.

1.1.3 Copies of this document should be available for inspection on site. The developer will inform the local planning authority within twenty-four hours if the designated arboriculturist is replaced.

1.2 Terms of Reference

1.2.1 I am instructed by Mr & Mrs Arenson to prepare an arboricultural impact assessment & method statement report to accompany a planning application for proposed works (including replacement of existing rear conservatories) at Northgate, North End Avenue, London NW3 7HP with reference to British Standards publication: Trees in relation to design, demolition & construction - Recommendations (BS5837:2012).

1.2.2 The tree protection plan at Appendix A is based on existing ground floor drawing reference AP-010 PI-1 scale 1:100@A3 and proposed ground floor drawing reference AP-210 PI-1 scale 1:100@A3 from Rayca Design.

1.3 Development Proposals & Impact Assessment

1.3.1 See section 1.1.1, Appendix A & accompanying material for full details of the development proposals.

1.3.2 Surveyed trees are retained with these proposals but works to tree 1 are recommended at Appendix B, which are irrelevant of development.

1.3.3 The majority of site works pertinent to this report will take place within the root protection area (RPA) of retained trees. Hard standing is present & available in the vicinity for storage of materials etc. (indicated on the plan at Appendix A). Existing hard standing between tree 1 & the rear conservatories will be retained unaltered through the course of development. Tree 1 can be protected by fencing to the specification recommended by BS5837:2012 (see Appendix C for details), but care is required when erecting (& removing) this fencing to ensure that soft landscaping is not damaged in the process - the aim is to prevent any potential for direct physical damage to the trunk of this tree whilst leaving adequate working space between the tree and the conservatory. Existing hard standing

will serve as adequate ground protection between tree 1 and the rear conservatories - this surface will be unaltered throughout development.

1.4 Sequence of Works

1.4.1 The sequence of works should be as follows:

- tree works required to allow or facilitate development (n/a)
- erection of tree protection barrier (TPB) on advised line(s)
- approved construction works to rear conservatories
- removal of TPB
- soft landscaping if envisaged

1.5 Site Supervision

1.5.1 An individual, e.g. the Site Agent, must be nominated to be responsible for all arboricultural matters on site. This person must:

- be present on-site for the majority of the time
- be aware of the arboricultural responsibilities
- have the authority to stop any work that is causing, or has the potential to cause, harm to any retained tree
- be responsible for ensuring that all site operatives are aware of their responsibilities toward trees on site and the consequences of the failure to observe these responsibilities
- make immediate contact with the local authority and/or the designated arboriculturist in the event of any tree-related problems occurring, whether actual or potential

1.6 Site Monitoring

1.6.1 The site agent will be responsible for monitoring all arboricultural works, inspecting protective fencing and monitoring any works within exclusion zones. The designated arboriculturist will be available for site visits on a basis to be agreed upon between the client and planning authority when/if appropriate or required, i.e. if required by condition. It is recommended that a record of site visits is maintained for inspection on-site and copies forwarded to the developer/agent and to the local planning authority. A certificate of practical completion can be produced for sites deemed by all parties to merit this.

1.6.2 It is the responsibility of the client to advise Arbortrack when the project begins and to forward on the approval notice when published on the planning portal, should supervision requirements be stipulated.

1.6.3 Principal contact information: 1/. James Bell. Arbortrack Systems Ltd. Arboricultural Consultant. 07986 122074. 2/. Mr Nick Bell. CC Arboricultural Officer. 0207 9745939 email nick.bell@camden.gov.uk. 3/. Mr Raimundo Torres. Rayca Design. 07545 305333 email raimundo@. 4/. Site agent details to be advised.

1.7 Statement Adoption

1.7.1 It is recommended that, in due course, acceptance of the recommendations in this report is demonstrated by, for example, the architect specifying in writing to the building contractor that tree care conditions apply in execution of the contract and by an estimate or written undertaking from the contractor to the architect demonstrating that the practical aspects of observation of such recommendations have been priced in.

1.7.2 If conflicts between any part of a tree and the building arise during the course of development, these can often be resolved quickly and at little cost if a qualified arboriculturist is consulted promptly. Lack of such care is often apparent quickly, and decline and death of such trees can spoil design aims and can, of course, affect saleability, as well as reflecting poorly on the construction and design personnel involved. Trees that have been the recipients of careful handling during construction add considerably to the appeal and value of the finished development.

2.0 Pre-Development Site Preparation

2.1 Arboricultural Works

2.1.1 See Appendix B for full details of tree works requested irrelevant of development.

2.2 Preparation of Surfaces

2.2.1 Existing hard standing will serve as effective ground protection – no heavy plant is proposed for use on this project: foot traffic only.

2.3 Installation of Tree Protective Barrier

2.3.1 The TPB must be comprised of a vertical and horizontal scaffold framework, braced to resist impacts, with vertical tubes spaced at a maximum level of 3m. On to this, weldmesh panels should be securely fixed with wire scaffold clamps: see section 6.2.2 and Figure 2 of BS5837:2012 (Appendix C). Hardboard or marine ply sheets can be used as an alternative to weldmesh panels, but these must be fixed firmly to the framework. The location of the TPB is shown in Appendix A.

2.3.2 This TPB is to be erected before any construction work commences on site, is to remain 'in situ' and undamaged for the duration of all work or each phase, and is only to be removed once all work is completed. If any work other than preparatory tree work is deemed necessary prior to the erection of fencing, the designated arboriculturist should be informed to enable his/her presence to oversee the work being carried out.

2.3.3 The only other exception is the completion of soft landscaping, but if any excavations, however minor, are to be carried out as part of soft landscaping within RPAs, an arboricultural assessment must be carried out beforehand and any arboricultural protection measures incorporated. The TPB should carry waterproof warning notices denying access within RPAs.

2.3.4 The Tree Protection Plan in Appendix A illustrates where the protective fencing should be located to form the boundary of the Tree Protection Zone (TPZ). The TPZ is an exclusion zone and suitable steps should be taken to prevent access by pedestrians and vehicles and the storage of any works materials and equipment should be located outside of the TPZ.

2.4 Pre-Development Site Inspection

2.4.1 At the instigation of the client/site agent or CC, upon the erection of the fencing, the designated arboriculturist will meet the relevant local authority member on-site to check the standard of the work(s). If there are any amendments required to the protective fencing, these will be agreed upon at this meeting, confirmed in writing, and undertaken thereafter.

3.0 Development Phase

3.1 General Precautions

3.1.1 No fires shall be made on any part of the site or within 10m of the furthest extent of the canopy of any tree or group tree to be retained on-site or on land adjoining.
3.1.2 No spilling or pouring of fuels, oils, solvents, or tar shall be made on any part of the site.
3.1.3 No materials that are likely to have an adverse effect on tree health, such as oil, bitumen or cement, will be stored or discharged within 10 metres of the trunk of a tree that is to be retained.
3.1.4 No spillage or discharge of wet mortar or concrete shall be made on any part of the site.
3.1.5 No storage of materials shall be made within the protective fences.
3.1.6 No breaching or moving of the protective fences shall occur without the approval of the designated arboriculturist.
3.1.7 Alterations in levels within the tree protection fence areas shall be avoided.

3.2 Root Protection Areas

3.2.1 The RPA is a desirable zone of protection around the trees' rooting system and these have been marked on the plan in Appendix A. The RPAs will lie within the TPZ and therefore be fully fenced off (see Appendix A) unless where appropriate ground protection is offered.

3.3 Site Access, Accommodation & Storage

3.3.1 Many site activities are potentially damaging to trees, e.g. material storage, parking, soil compaction and the use of plant machinery. In this latter example, particular care is required to ensure that the operational arcs of excavation and lifting machinery, including their loads, do not physically damage trees when in use or while accessing the site.

3.4 Routing & Installation of Services (n/a)

3.5 Demolition Measures

3.5.1 If required, access facilitation pruning should be undertaken to prevent injurious contact between demolition plant and the tree(s). Any such pruning should be undertaken in accordance with British Standards publication: Tree work – Recommendations (BS3998:2010).

3.5.2 Demolition/removal of structures (including underground structures) within what would otherwise be an RPA should proceed with due caution to avoid unnecessary damage to trees.

3.5.3 All plant and vehicles engaged in demolition works (removals only), if not operating on existing hard standing, should either operate outside the RPA or should run on a temporary surface designed to protect the underlying soil structure. See section 6.2.3.3 for further detail.

3.5.4 Where trees stand adjacent to structures scheduled for demolition, it will be necessary to undertake demolition inwards within the footprint of the existing building (often referred to as "top down, pull back").

3.5.5 If the weather is "dry," the site should be watered down to reduce dust travelling to adjacent properties. Where levels of dust build-up on trees occurs, it may be necessary to seek the advice of the designated arboriculturalist on remedial measures, e.g. hose down the tree(s) immediately following any significant accumulation of dust.

3.5.6 Heavy plant used to remove materials should work systematically *away from retained trees*. The aim is to ensure that spoil is removed away from RPAs, but it is very important that the original soil levels are not altered.

3.6 Changes in Grade

3.6.1 The upper layer of top soil (top 60cm) contains the majority of a tree's roots, and if this is disturbed by a change in ground level, serious damage can be caused. On this basis, as a minimum, level changes should be avoided within RPAs.

3.6.2 If any significant section of ground-level requires raising within RPAs, this should be achieved using coarse, granular material such as pebbles. See section 7.4.4.4 of BS5837:2012.

3.6.3 If ground levels need to be altered within 1.5 metres of any tree trunk prior agreement must be sought and given by the local authority tree officer.

3.7 Construction Measures

3.7.1 No specialist construction methods are required for the rear conservatory proposals.

3.8 Removal of Tree Protective Barrier

3.8.1 The protective fencing may be removed only upon completion of the development phase when all drainage and service runs have been installed and any site machinery has been removed.

3.9 Post Construction Landscaping

3.9.1 Following the developing phase, some trees may be subject to either landscaping or seeding beneath their canopy, but at this stage, the protective fencing will have been removed.

3.9.2 Any approved landscaping works should avoid the changing of ground levels or deep digging. Mechanised cultivation such as tractor-mounted rotovation must not be used within the RPAs of existing trees.

3.9.3 Heavy machinery should not be used in the vicinity of any retained trees.

3.9.4 If herbicides are to be used, they should be appropriate to their purpose and not be used in such a way as to damage any retained trees or vegetation.

3.9.5 Ideally, retained trees should be within a shrub area as this reduces the chances of compaction and disturbance of root systems.

4.0 Summary of Proposed Methods

4.1 Table of Impacts and Mitigation

4.1.1 The table below summarises the main areas where trees could become damaged by the proposed development and the methods that need to be adopted in order to prevent such damage:

Impact	**Mitigation**	**Reference**	**Trees Affected**
Passage of machinery and storage of materials over RPAs	Construction of protective fencing to acceptable standards	Sections 2.3. Fencing spec Appendix C, Tree Protection Plan Appendix A	1
Works within RPAs of retained trees	Existing Ground Protection	Section 2.2.1	1

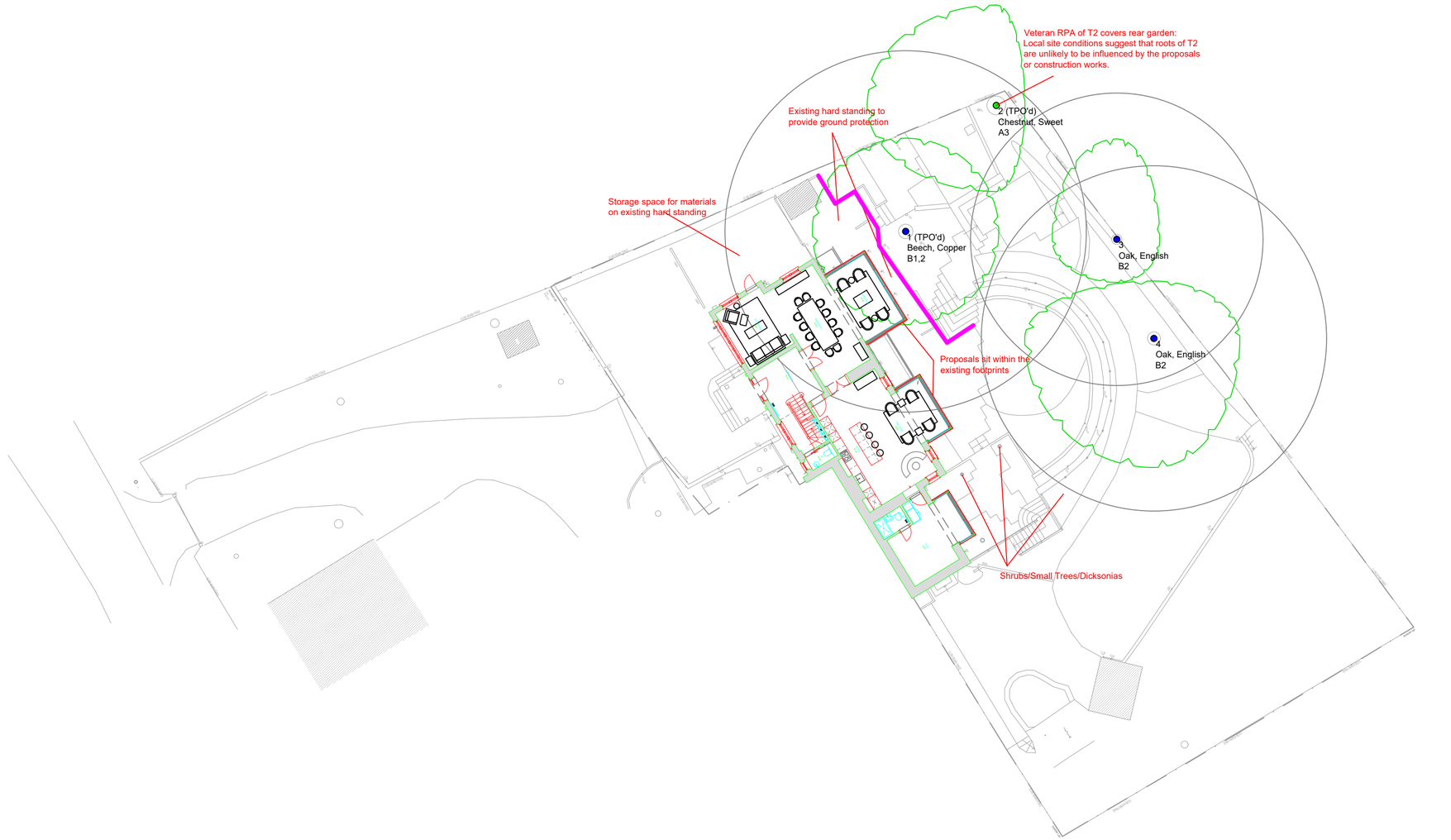
5.0 Completion

5.1 Completion Meeting

5.1.1 Following completion of the approved works on site, the designated arboriculturist will meet with a local authority representative and agree upon any remedial works deemed necessary (if any).

5.1.2 Any works agreed in the above meeting will be confirmed in writing and should be performed to BS3998:2010.

5.1.3 Any work proposed post-development should be checked to avoid penalty for performing illegal work on a protected tree.



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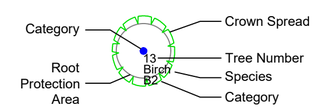
Site: Northgate, North End Avenue, Hampstead	
Drawing Title: Tree Protection Plan	1:250@A2
Appendix: A	May 2021

Key:

- Category A
- Category B
- Category C
- Category U



Tree Protection Fencing

Site: North End Avenue

Date: 27th April 2021

Appendix B

BS5837:2012 Tree Survey Schedule

Arbortrack Systems Ltd

07986 122074

Surveyor(s): James Bell

Ref: jwmb/rpt1/northgate/AIAAMS

Tree No.	English Name	Height	Crown Spread N	S	E	W	Ground Clearance	Stem Diameter	Protection Radius	Age Class	Growth Vitality	Structural Condition	B.S. Cat	Sub Cat	Useful Life	Comments
1	Beech, Copper	20	6.5	6.5	6.5	6.5	8	1050	12.6	Mature	Normal	Fair	B	1,2	20+	Included bark in main stem unions Minor deadwood in mid to upper crown Cable braced @ 14m; TPO tree
2	Chestnut, Sweet	13	7	6	2	9	2	0	0.0	Veteran	Normal	Fair	A	3	>40	TPO tree Stem diameter = 200cm # Superb veteran tree; veteran RPR is 30m.
3	Oak, English	14	7	3	3	4.5	7.5	850 #	10.2	Mature	Moderate	Fair	B	2	20+	Suppressed by nearby tree Asymmetry (major)
4	Oak, English	17	4	9	6	9	6.5	1003 #	12.0	Mature	Moderate	Fair	B	2	20+	Suppressed by nearby tree Asymmetry (major) Minor deadwood throughout; large pruning wound to SE @ 3.5m

Site: North End Avenue

Date: 27th April 2021

Appendix B
Recommended Tree Works

Arbortrack Systems Ltd

07986 122074

Surveyor(s): James Bell

Ref: jwmb/rpt1/northgate/AIAAMS

Tree No.	English Name	Height	Stem Diameter	Crown Spread				BS Cat	Sub Cat	Recommended Works	Comments / Reasons
				N	S	E	W				
1	Beech, Copper	20	1050	6.5	6.5	6.5	6.5	B	1,2	CR to previous points i.e. 1 -1.5m; inspect cable brace @ 14m; DWD	Included bark in main stem unions Minor deadwood in mid to upper crown Cable braced @ 14m; TPO tree Recommended husbandry 2

Appendix B

Notes on Tree Survey Schedule:

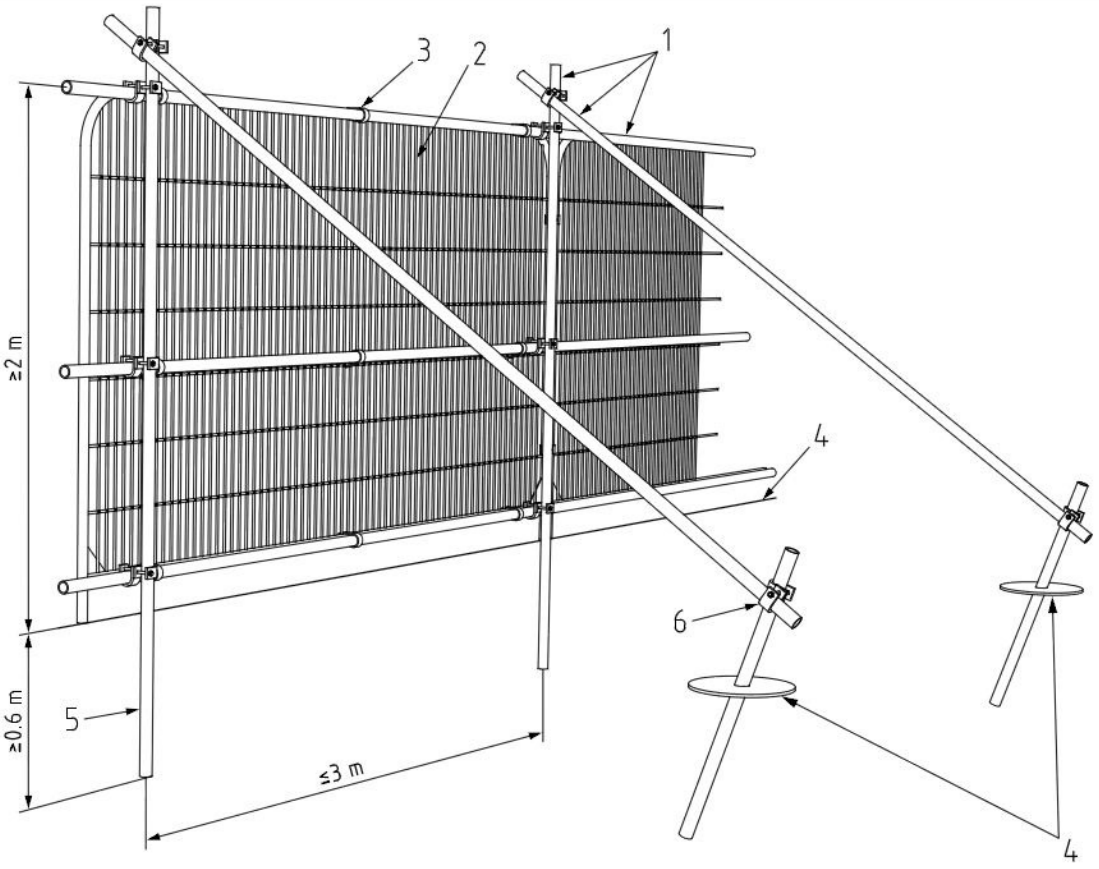
- **Height** describes the approximate height of the tree measured in metres from ground level.
- The **Crown Spread** refers to the crown radius in metres from the stem centre and is expressed as an average of **NSEW** aspect if symmetrical.
- **Ground Clearance** is the height in metres of crown clearance above adjacent ground level.
- **Clear Stem Height** is the distance between trunk base and first branch separation measured in metres.
- **Stem Diameter** is the diameter of the stem measured in millimetres at 1.5m from ground level for single stemmed trees. See section 4.6 for details of treatment for multistems.
- **Protection Radius** is a radial distance in metres measured from the trunk centre.
- **Growth Vitality** - **Normal** growth, **Moderate** (below normal), **Poor** (sparse/weak), **Dead** (dead or dying tree).
- **Structural Condition** - **Good** (no or only minor defects), **Fair** (remediable defects), **Poor** - Major defects present.
- **B.S. Category** refers to (British Standard 5837:2012 Table 1) and refers to tree/group quality and value; '**A**' - High, '**B**' - Moderate, '**C**' - Low, '**U**' - Unsuitable for Retention.
- **Sub Cat** refers to the retention criteria values where **1** is mainly **arboricultural** qualities, **2** is mainly **landscape** qualities and **3** is mainly **cultural** values including conservation.
- **Useful Life** is the tree's estimated remaining contribution in years.
- **First Significant Branch (FSB)** is the height of the first significant branch above ground level taken at the trunk separation point.

Notes on Recommended Tree Works:

- **1, 2, 3** Urgent (ASAP), Standard (6-12 months), Non-Urgent (2-3 years)
- **CB** Cut back to boundary/clear from structure
- **CL#** Crown lift to given height in meters
- **CT#%** Crown Thinning by identified %
- **CCL** Crown clean (remove deadwood/crossing & hazardous branches & stubs)
- **CR#%** Crown Reduce by given maximum percentage (of outermost branch & twig length)
- **DWD** Remove deadwood
- **Fell** Fell to ground level
- **FInv** Further Investigation (generally with decay detection equipment)
- **Pol** Pollard or re-pollard
- **Mon** Monitor ongoing condition (annually by staff/owners & every 2-3 years by consultant). Svr Ivy/Clr Bs Sever Ivy/clear base and re-inspect base/stem for concealed defects

Appendix C Tree Protective Fencing Detail (from BS5837:2012)

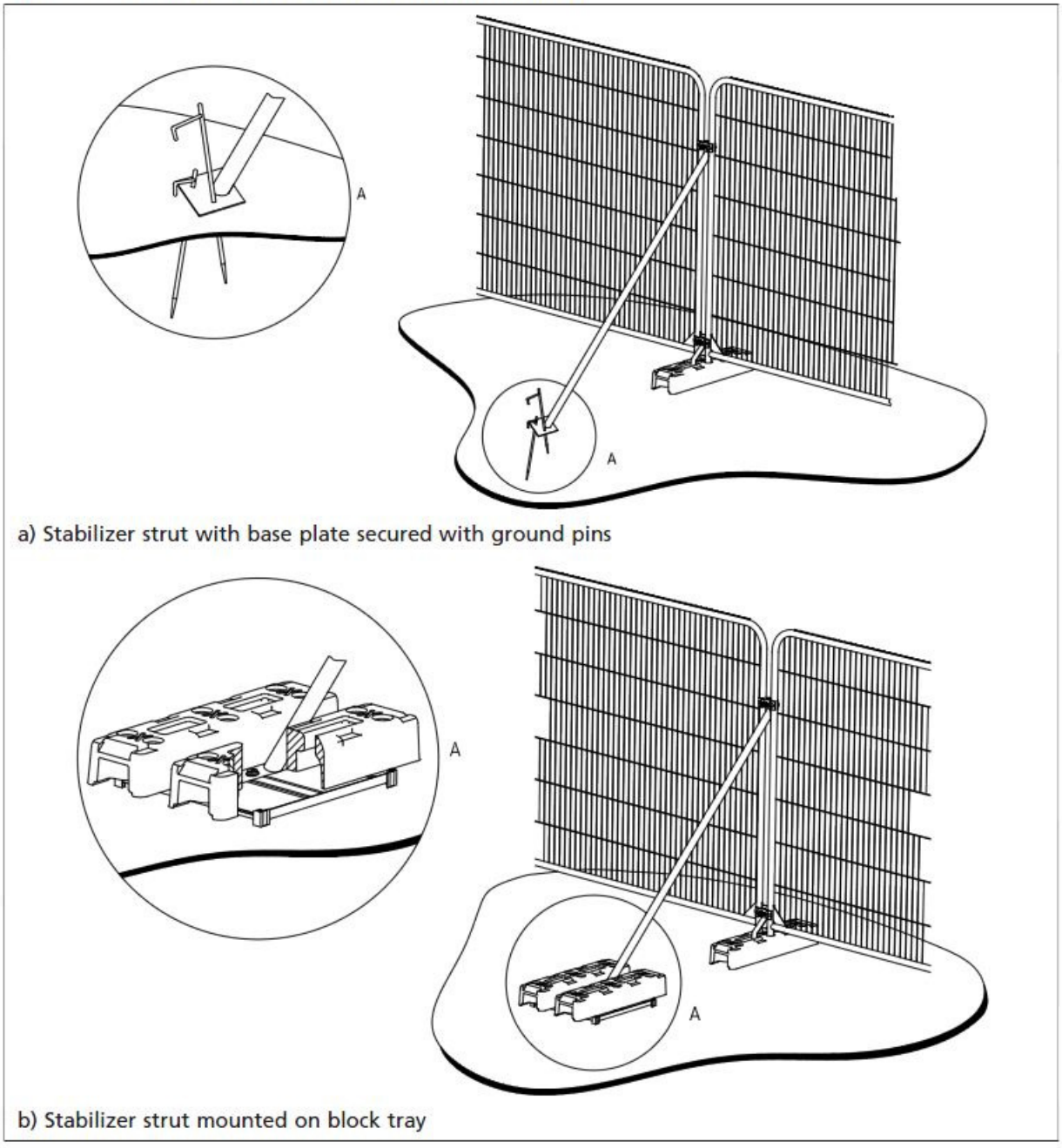
Figure 2 **Default specification for protective barrier**



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

Appendix D

1.0 Glossary of Terms

Canker	Disease damaged area of a tree, usually caused by fungus or bacteria.
Co-dominant Stem	A stem which has grown in direct competition to the main stem and which has formed a substantial size influencing the appearance of the tree.
Crown Lift	The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.
Crown reduce	The reduction of a tree's height or spread while preserving its natural shape.
Crown thin	The removal of some of the density of a tree's crown**,** usually 5-25% allowing more light through its canopy and reducing wind resistance.
Deadwood	The removal of all dead, dying and diseased branches from a tree. Also, wood which is dead.
Dieback	Where branches are beginning to show signs of death usually at the tips in the crown.
Epicormic shoots	Small branches that grow in uncharacteristic clusters around the base or the stem of a tree, usually as a result of bad pruning or some other stress factor.
Formative pruning	The trimming of a tree to remove weaknesses and irregularities which may lead to problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown.
Included bark	Where the bark on two adjoining branches or stems is growing tightly together, forming a joint with limited physical strength.
Pollarding	A method of tree management in which the main trunk of the tree is cut at about 4m, and the resulting branches are then cropped on a regular basis.
Remedial pruning	The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown. Sometimes referred to as crown cleaning.
Topping	Topping is a form of pruning that removes terminal growth leaving a 'stub' cut end. Topping causes serious health problems to a tree.

2.0 General Guidelines

2.1 All work must be to BS 3998:2010 – Tree work - Recommendations

2.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors, and should be covered by adequate public liability insurance.

2.3 Any defects seen by a contractor or the client that were not apparent to the consultant must be brought to the consultant's attention immediately.

2.4 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this method statement are carried out under the supervision of the designated arboriculturist.

2.5 It is advisable to have trees inspected by designated arboriculturist regularly. On this site it is recommended that these inspections are made every year.