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ARBORICULTURAL, LANDSCAPE & MANAGEMENT CONSULTANTS

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Arboricultural Impact Assessment

- Tree Survey
- Tree Protection Plan
- Arboricultural Method Statement

At:-

29 Steeles Road
London
NW3 4RE

On behalf of:-

Neiheiser Argyros
59 Lonsdale Road
London
NW6 6RA

Prepared by:

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

Survey Date: 26th August 2020
Report Date: 9th September 2020
Project no: 1574

CONTENTS

1 BACKGROUND

1.1 This Arboricultural Impact Assessment has been instructed by Neiheiser Argyros Architects, on behalf of the owner to assess the arboricultural impact of the proposed construction of a garden studio at 29 Steele's Road.

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:

- Neiheiser Argyros, Garden Studio Plans

2 SURVEY DETAILS AND SCOPE

2.1 The site survey included trees and shrubs, within and immediately adjacent to the site, 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 eg "est 300".

2.4 At the time of the survey, the weather was fine with no restrictions to visibility. Broadleaf trees were in leaf. There were no limitations to access around the trees within the site. Trees in adjacent gardens were only viewed from the garden of 29 Steele's Road.

2.5 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 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 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 Camden Council website was viewed on 09-09-20, showing that the site falls within a Conservation Area. The presence of Planning Conditions currently attached to the site, was not checked.

4.2 Since the site is covered by 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, this overrides protection provided by Tree Preservation Orders or Conservation Areas.

5 ARBORICULTURAL METHOD STATEMENT

5.1 Site Overview

5.1.1 The proposal is for the construction of a garden studio with a green roof at 29 Steele's Road. The proposed site plan has been added to the survey drawing, along with tree details, to create the Tree Protection Plan attached as Appendix A. Works to the house have been approved under a separate planning application.

5.1.2 The only tree likely to be affected by the new studio is a 7.5m Gleditsia growing close to the boundary wall.

5.1.3 Other trees within the site are all of 3.5m or less in height and of little significance. There are some more valuable trees in the adjacent garden to the north.

5.1.4 There is a mature London plane, T10, street tree outside the property.

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 Five 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:

- the area shaded cyan on the Tree Protection Plan, indicating Ground Protection Areas, where roots must be protected, as described in section 5.5 below.

- the area cross hatched red on the Tree Protection Plan, where there will be excavation for new shrub beds within the Root Protection Area of T10, where hand excavation must be used, as described in section 5.6, to minimise any potential root damage.

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.

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 To protect the stem of T10, heavy-duty plywood must be used to construct a solid 2m tall box, around the stem of the tree. No part of the box must be in contact with the tree, however polystyrene blocks can be wedged between the box and the tree stem to absorb any impact and to help keep the box in place.

5.4.5 After erection of Tree Protection Fencing and installation of ground protection, 2 days notice must be given to the Local Planning Authority before any ground work, starts on site.

5.4.6 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.

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

5.5 Ground Protection Area

5.5.1 The Ground Protection Area, which is shaded cyan on the Tree Protection Plan, contains hard surfacing which is protecting any underlying roots. No excavation must be permitted beneath the base course within this area.

5.6 Hand Dig Area

5.6.1 A Hand Dig area is shown cross-hatched red on the Tree Protection Plan, in the front garden where existing hard surfacing is to be removed to create a new shrub bed.

5.6.2 An excavator must only be used for the removal of the existing hard surfacing within the Root Protection Area of T10, if it can work only from areas of hardstanding, or from outside the Root Protection Area. A banksman must be present during this operation and excavation must go no deeper than the existing hard surfacing and must cease immediately if roots are found.

5.6.3 Once hard surfacing has been removed, any further excavation required to remove sub-base and subsoil must be carefully undertaken by hand, retaining all roots over 25mm in diameter and as many smaller roots as possible. The area must then immediately be topsoiled using good quality topsoil supplied to BS3882:2015, enriched with green recycled compost.

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.

5.7.4 Landscape works carried out within Root Protection Areas must be undertaken with great care so as not to damage shallow roots. 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. However, none of the trees recommended for felling are 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 trees, 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.

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 New Tree Planting

5.10.1 A new tree must be planted in the position shown on the Tree Protection Plan in appendix A. This must be:

- a 16-18cm girth Himalayan birch, Betula Jacquemontii, supplied as a container grown specimen in at least a 150litre container.

The tree must be double staked and planted in a 900mm by 900mm tree pit, the same depth as the rootball but with the base of the pit broken up, incorporating 160litres of tree planting compost with each. Planting must be carried out during the first planting season (December to March) after the completion of construction. Should the tree die within 5 years of planting it must be replaced during the next planting season.

5.10.2 The quality of all nursery stock, standards of workmanship and maintenance must comply with the relevant sections of British Standard BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

5.11 Arboricultural Supervision

5.11.1 A qualified Arboricultural Consultant must be retained during the period of construction to carry out the following:

- to meet with/ 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 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:
  - T5 – a 3.5m semi-mature Chinese privet, growing through the canopy of the adjacent walnut.
  - T6 – a 3m bay tree, growing through the canopy of the adjacent walnut.
  - T8 – a 2.5m willow, which has ben repeatedly reduced as planted in an unsuitable position.

- Category B/C – between categories B and C:
  - T4 – a 2.1m semi-mature Irish yew.

- Category B – moderate quality:
  - T1 – a 7.5m Gleditsia

6.2 The only tree for removal, which has any significance, is the 7.5m Gleditsia, T1. Although this is becoming engulfed in creepers, it is showing good vigour. It provides some amenity benefit for surrounding properties but is not visible to the public. A new Himalayan birch is proposed which will have a height of 5-6m on planting and quickly develop to replace T1.

6.3 Protection measures have been specified to protect the Root Protection Area of all retained trees, other than for the Hazel (T2). However, this multi-stem tree is growing the other side of a 1.6m boundary wall where the foundations are likely to have acted as a root barrier.

6.4 Measures have been specified to protect the trunk of the mature street tree (T10), which is just outside the parking area and could be at risk from contractor's vehicles and deliveries. A new shrub bed will be created within the Root Protection Area of this tree, which will improve the rooting potential of the tree. Hand work has been specified to avoid any root damage during formation of the shrub bed.

6.5 Provided the recommendations in this report are followed, the arboricultural impact of this development on existing trees is considered acceptable.

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 (www.ntsgroup.org.uk)*
- *Mattheck & Breloer (1994). HMSO London. Research for Amenity Trees No4: The Body Language of Trees.*

APPENDIX A

BS 5837: TREE CATEGORY GUIDE

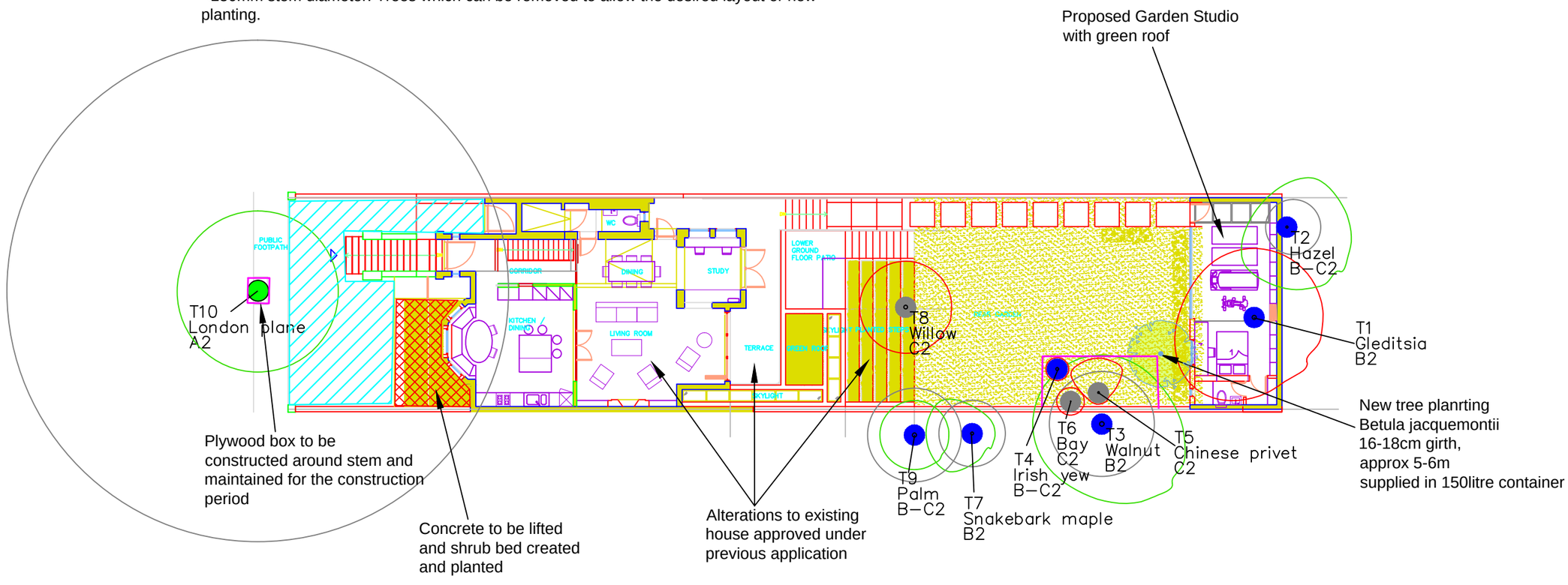
Category U: Unsuitable for retention, trees with less than 10 years life expectancy.

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.

Category B: moderate quality trees, able to make a significant contribution for at least 20 years, normally retained.

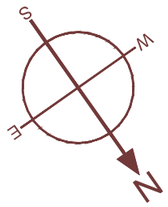
Category B/C: an intermediate category between categories B and C (not specifically described in BS5837). Trees, which should be retained wherever possible, providing retention does not significantly constrain the layout.

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.



Key

- Category U
- Category A
- Category B
- Category C
- Crown spread: retained trees
- Trees For Removal
- Root Protection Area
- Tree Protection Fence
- Ground Protection Area
- Hand Dig Area



Scale

0 5m 10m

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JOB TITLE
PROPOSED GARDEN STUDIO
29 STEELE'S ROAD

DRAWING TITLE
TREE PROTECTION PLAN

DRAWING NUMBER	REV
1574–01	A

REVISIONS

SCALE	DATE	DRAWN BY
1:200 at A3	SEP 20	sjss

Appendix B
BS 5837: 2012 Tree Schedule

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 Distance (m)	Root Protect. Area (m2)
				N	S	E	W								
T1	Gleditsia	7.5	180	3	3	4	3	2.5	Early mature	Major lateral to east from 2m. Becoming engulfed in creepers. Showing good vigour.	Remove to facilitate development	20-40	B2	2.2	15
T2	Hazel	4.5	100	3	1.5	2.5	2.5	1.5	Mature	Growing in adjacent site, the other side of boundary wall. Approximately 15 stems from base- average 25mm diameter. Ground level in adjacent site approximately 0.3m lower.		15-30	B-C2	1.2	5
T3	Walnut	4.5	est 190	4	3	3	3	0.5	Semi-mature	Growing in adjacent garden, the other side of 1.7m brick boundary wall. Cable embedded in trunk. Showing good vigour. Awkward structure.		20-40	B2	2.3	16
T4	Irish yew	2.1	130	0.5	0.5	0.5	0.5	0.1	Semi-mature	Upright branching. Good vigour.	Remove to re-landscape garden.	15-30	B-C2	1.6	8
T5	Chinese privet	3.5	80	0.5	1.5	0.5	1.5	1.3	Semi-mature	Showing good vigour, but competing with adjacent walnut.	Remove to re-landscape garden.	15-30	C2	1.0	3
T6	Bay	3	20	0.6	0.6	0.6	0.6	0.3	Semi-mature	Twin stems from base- 10,20mm.	Remove to re-landscape garden.	20-40	C2	0.2	0
T7	Snakebark maple	6	120	1	2	2	1	1.9	Semi-mature	Growing in adjacent site the other side of 1.7m brick boundary wall. Attractive small growing tree.		20-40	B2	1.4	7
T8	Willow	2.5	160	2	2	2	2	1.1	Semi-mature	Heavily reduced on a number of occasions- now with 1.5m fresh growth.	Remove to re-landscape garden.	20-40	C2	1.9	12
T9	Palm	6.5	est 170	1.5	1.5	1.5	1.5	2.5	Early mature	Growing in adjacent property, the other side of 1.7m brick boundary wall. Reasonable vigour.		15-30	B-C2	2.0	13

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

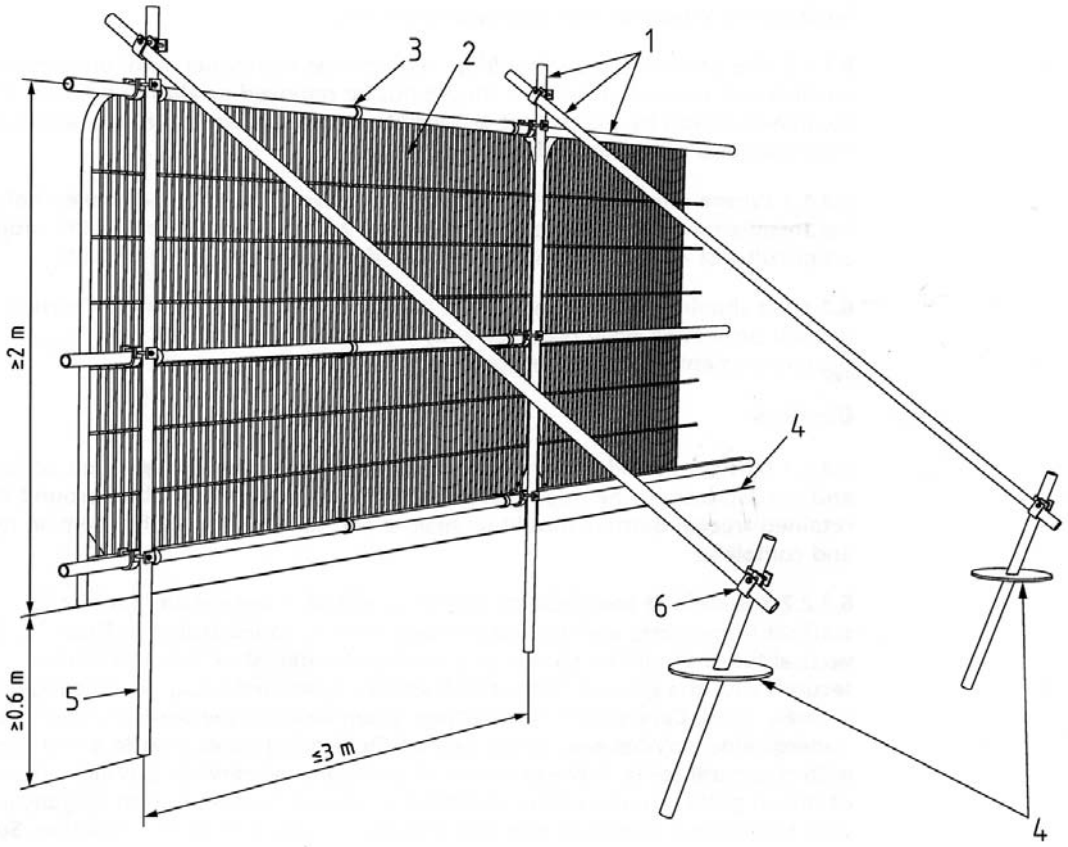
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10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

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

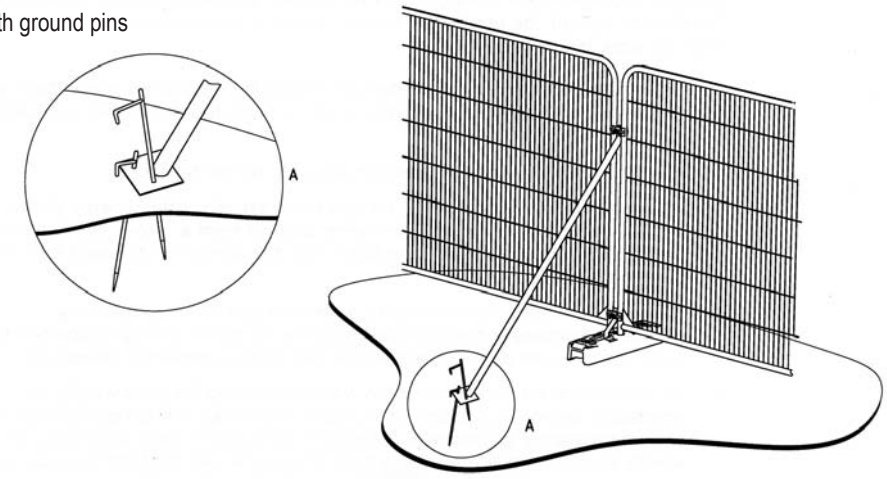


Figure 3b

Stabiliser strut mounted on block tray