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TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT IN RELATION TO PROPOSED DEVELOPMENT AT 319 & 319A RICHMOND ROAD, TWICKENHAM, TW1 2PB.

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Tree Survey and Arboricultural Impact Assessment in Relation to Proposed Development at 319 & 319A Richmond Road, Twickenham, TW1 2PB.

- 1. I am instructed by Mrs L. James to undertake an inspection of trees at the above site in connection with the alteration, refurbishment and extension of the existing building. I carried out my inspection on the 9th December 2024 and this report summarises my findings.
- 2. Before any works to trees specified within this report are undertaken it would be necessary to write to the Local Authority as this property is situated within a Conservation Area.
- 3. I have been supplied with copies of the existing & proposed drawings and enclose an annotated copy of the Existing & Proposed Site Plan as appendix 'b' to this report which indicates the position of the trees with their respective identification numbers (Tree Location & Protection Plan).
- 4. Details of individual trees are given in the attached schedule (appendix 'a'). Species are shown by their common names. All measurements are approximate and stem diameters are measured at 1.5 metres from ground level unless stated. All recommendations etc. are based upon an external inspection of the trees from ground level using the VTA method (Visual Tree Assessment). This method relies upon the surveyor identifying external signs or defects, which may include lower than average tree vigour (which can point to significant tree health problems in some cases and trigger the need for further investigation), structural defects such as cracks or broken branches, or the presence of certain fungal fruiting bodies which often indicate the presence of internal decay etc. Should any potential health or structural problems be noted during an inspection, appropriate works or a recommendation for monitoring (or a more detailed inspection) would be detailed in appendix 'a'. Due to the very nature of trees, the environment, and the potential of unforeseen actions taking place following inspections (development works etc.), a tree can rarely be labeled as 'safe', with the nearest comparison being 'free from external signs of significant disease or structural defects' at the time of inspection.
- 5. The information contained within the schedule has been collected in accordance with recommendations given in BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction Recommendations'. I have also categorised each tree in accordance with the above Standard and they are colour coded on the enclosed plan (Tree Location & Protection Plan appendix 'b') to aid their recognition.

The following categories apply;

A - Trees of high quality. (Green)

B - Trees of moderate quality. (Blue)

C - Trees of low quality. (Grey)

U - Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years. (Red)

6. In addition to the above, each tree is assigned a subcategory (1 - 3) which are detailed in the table attached at appendix 'e'. It is intended that each subcategory carries equal weight – for example an A 1 category tree would have the same retention priority as an A 2 tree.

General.

- 7. The tree cover at this property is very limited in nature with no trees to the front of the property and five trees in the rear garden. The largest tree to the rear of the property is a mature silver birch (T.4) that grows close to the northern boundary and which is drawn in nature due to previous suppression. This tree has a large amount of dead / dying wood scattered throughout its crown (some of medium large diameter) which may be attributable to the previous dense ivy growth that reached high into its main crown framework and which has since been removed (leaving some dead stems). Much of its crown is exhibiting normal vigour and the works specified in appendix 'a' should greatly improve the appearance of this specimen. It is recommended that the said works are carried out in the near future. To the east of the birch is a small variegated holly (T.5) that has an unbalanced crown that grows largely over neighbouring land and which has been reduced in the past.
- 8. Closer to the rear of the house is a small bay tree / shrub (T.1) that has been cut back on numerous occasions and which is of limited internal landscape value. A larger ornamental crab apple (T.2) grows to the south east of the garden and close to the site boundary and is unfortunately in a serious state of decline with large amounts of scattered dead wood and limited live growth in some areas of its crown (see appendix 'a'). A mature willow leaved pear tree is present to the south west of the garden (T.3) and also has large amounts of dead wood and it is recommended that both trees are removed and replacement tree planting undertaken, regardless of the future use of the site.
- 9. To the north west of the site and in neighbouring land is a mature common lime (T.6) that forms part of a broken row of the species to the rear of the properties and which has been recently reduced. This specimen was once regularly maintained as a pollard and has since been permitted to form a crown of a more natural appearance. A small and well established Lawson cypress (T.7) grows in neighbouring land to the east and has a well defined and slender main stem and, to its east, is a much taller silver birch (T.8) which is of a good appearance but a large tree for its location.

Proposed Development/Methodology.

- 10. I have assessed the proposed site layout whilst having regard to tree protection measures recommended in BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction Recommendations' and taking into account the Root Protection Areas (RPA's) shown in appendix 'c'. Where appropriate, I have detailed 'offset' RPA's to take into account any existing impediments to root growth. I have also prepared a Tree Protection Plan (Tree Location & Protection Plan) which is enclosed as appendix 'b' to this report.
- 11. The proposed works to consider at this property in relation to trees are the construction of a single storey rear extension to the north west of the existing building and an associated increased lightwell area. The only tree to be directly affected by the proposed works is the small and shrub like bay tree (T.1) that is to be removed and which has no public amenity value.
- 12. As detailed above and in appendix 'a', the small ornamental crab apple tree (T.2) and the unbalanced willow leaved pear (T.3) are both recommended for removal, regardless of the future use of the site, due to their reducing vigour and poor aesthetic value. Replacement tree planting will be undertaken as part of these proposals and the approximate location of such planting is shown on the attached Tree Location & Protection Plan (appendix 'b'). Due to the fairly small size of the garden and the proximity of taller retained trees, including those in neighbouring land, small maturing ornamental trees will be planted and the species of such will be agreed with the Local Authority. The new trees will be of containerised stock and of a minimum size of 'Standard'.
- 13. To the rear of the garden no disturbance is required within the RPA's of the tall silver birch tree (T.4) and the adjacent variegated holly (T.5) and these trees will be excluded from the construction works by the erection of temporary protective fencing as detailed in figure 2 of BS5837: 2012 (see appendix 'd') and as shown on the attached Tree Location & Protection Plan (appendix 'b'). Common lime tree T.6, Lawson cypress T.7 & silver birch T.8, which are all located in neighbouring properties, will be completely unaffected by the proposals and protected by the retention of the existing boundary walls.
- 14. All tree protection will be installed prior to the commencement of any site preparation works and must be maintained throughout the development process. The proposed location of any new services or soakaways etc. must be carefully considered at an early stage so as to ensure that excavation within Root Protection Areas is avoided or kept to an absolute minimum. Where such works are unavoidable (and following consultation with the Project Arboriculturalist) any excavations in such areas must be carried out in strict accordance with Sections 7.2 (as detailed below) & 7.7 of BS5837: 2012 and in the presence of the said Arboriculturalist.

- 15. Any required repairs to the existing boundary treatment must be undertaken in accordance with Section 7.2 of BS5837: 2012 as detailed below;
- 7.2.1 To avoid damage to tree roots, existing ground levels should be retained within the RPA. Intrusion into soil (other than piling) within the RPA is generally not acceptable, and topsoil within it should remain in situ. However, limited manual excavation within the RPA might be acceptable, subject to justification. Such excavation should be undertaken carefully, using hand held tools and preferably by compressed air soil displacement.

Note: Due to the demands that manual excavation places on a development project, and limitations arising from health and safety considerations, it is not realistic to plan for excavation using hand held tools where there is a need for trench shoring or grading the sides of the excavation to a stable angle of repose.

- 7.2.2 Roots, while exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should be done as soon as possible.
- 7.2.3 Roots smaller than 25mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25mm in diameter and over should be severed only following consultation with an arboriculturalist, as such roots might be essential to the trees health and stability.
- 7.2.4 Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

Conclusions.

16. The proposed construction works are located clear of the majority of the trees at this property and in adjacent land and only necessitate the removal of a small and insignificant bay tree / shrub (T.1). Two other small trees (crab apple T.2 & willow leaved pear T.3) are to be removed due to their poor condition / quality and replacement tree planting which will be of long term benefit to the garden and adjacent properties is proposed. Providing the above guidelines in relation to BS 5837: 2012 are followed and tree protection is installed prior to any development activity and maintained throughout the construction period, all trees to be retained should be safely integrated within the proposals.

- 17. Prior to the commencement of any works detailed in appendix 'a', it will be necessary to write to the Local Authority as trees at this property are the subject of protective legislation. Every effort should also be made to ensure that the protection afforded by the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way Act 2000 in relation to nesting birds and disturbing or damaging bat roosts is fully complied with.
- 18. Any tree works which are undertaken should preferably be carried out by an Arboricultural Association Approved Contractor. Such works must be carried out to a minimum standard of BS3998 and in accordance with good Arboricultural practice.

C. Fowler.

C.E. Fowler Dip. Arb (RFS), F. Arbor.A, Tech. Cert. (Arbor.A). December 2024.

Appendix 'a' Tree details

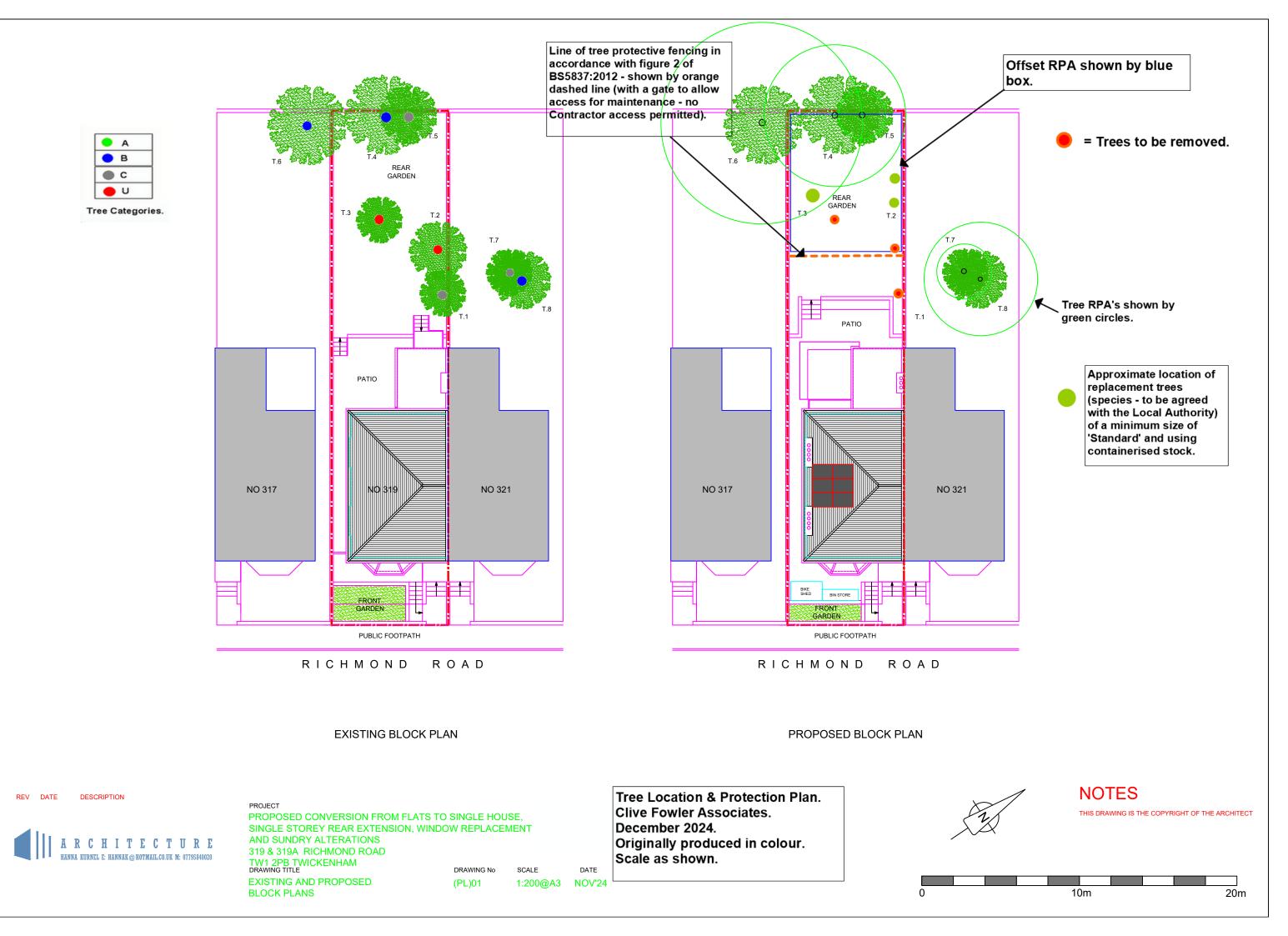
| No. | Species | Diameter @ 1.5 m (cm) | Age Class | Crown radius (m) | Height to 1st branch (m) | Crown height (m) | Height (m) | Condition / vitality | Estimated remaining contribution (years) | Category | Works | Notes. |
|-----|--------------------------|-----------------------------|--------------|--|-----------------------------------|------------------------|---------------|-------------------------|---|----------|------------------------------------|--|
| 1 | Bay | 9 at 1.2 m | Young | 0.75 north 0.75 east 0.75 south 0.75 west | 1.3 south | 2 | 2.5 | Good | 20> | C 1 | Remove to allow development. | Single stemmed shrub like specimen that has been cut back at various levels in the past. Previously regularly pruned at 2 metres. Pruned back on west side. Scattered dead wood and stumps. Internal landscape value only. |
| 2 | Ornamental crab apple | 14 | Mature | 2.5 north 2.75 east 4.5 south 2.75 west | 2 south west | 2 | 5.5 | Poor | <10 | U | Remove. | Boundary tree with two main stems arising at around 2.3 metres. Dead / dying stem below and to the south west. Sunken area at base to the south. Possible small areas of diseased bark on north side of trunk - just below / adjacent to main crown break. Over extended branches to the south. Possibly suppressed to the north in the past. Lowest branch to the north is in decline. Sinuous main framework. Reducing vigour and limited future potential. |

| No. | Species | Diameter @ 1.5 m (cm) | Age Class | Crown radius (m) | Height to 1st branch (m) | Crown height (m) | Height (m) | Condition / vitality | Estimated remaining contribution (years) | Category | Works | Notes. |
|-----|-----------------------|-----------------------------|--------------|---|-----------------------------------|------------------------|---------------|-------------------------|---|----------|------------------------------|--|
| 3 | Willow leaved pear | 15 | Mature | 2 north 2 east 3.5 south 2.75 west | 2.2 south east | 1.6 | 4 | Fair - poor | <10 | U | Remove. | Poor quality with a trunk lean towards the north west with its main crown framework stem growing towards the south west. Dead limb in lower crown to the north. Very congested crown with crossing branches as is normal for this cultivar. Large amount of scattered dead wood and small branch stubs. Declining vigour. |
| 4 | Silver birch | 37 | Mature | 5.75 north 3.5 east 4.5 south 4.5 west | 3.5 west | 3 | 18 | Fair | 10> | B 1 | Remove dead wood and ivy. | Tall drawn tree which has previously been partially suppressed. Heavily reduced or damaged in the distant past at a height of around 7.5 metres with a new dominant stem subsequently arising. A dying limb at this point to the north west with large dead ivy attached should be removed as soon as possible. Large dead ivy on trunk and areas of reduced vigour / dieback - other areas have good vigour. Raised buttress roots. Would be improved by specified works - hence 'b' category. |

| No. | Species | Diameter @ 1.5 m (cm) | Age Class | Crown radius (m) | Height to 1st branch (m) | Crown height (m) | Height (m) | Condition / vitality | Estimated remaining contribution (years) | Category | Works | Notes. |
|-----|-------------------|-----------------------------|----------------|---|-----------------------------------|------------------------|---------------|-------------------------|---|------------|---|--|
| 5 | Holly | 11 | Middle aged | 4 north 3.75 east 1 south 1.25 west | 2.25 north | 1.5 | 5.75 | Good | 20> | C 2 | Reduce overlong branch to the north east to balance with remaining crown. | Variegated cultivar with a sinuous main stem and a pronounced trunk incline towards the north east. Reduced in the past. Grows largely over neighbouring land. |
| 6 | Common lime | 53 (est.) | Mature | 2.5 north 2.5 east 5 south 4.5 west | 5.75 south west | 3.75 | 10 | Good | 20> | B 2 (est.) | No action - in neighbouring ownership. | Grows as part of a broken row of the species and has two main framework stems arising at around 5 metres. Previously maintained as a pollard at between 5.75 & 6.75 metres for a considerable period of time and subsequently permitted to form a new crown. Fairly recently reduced with growth to the south left uncut. Large sucker growth to the south east may eventually damage boundary wall. Not fully inspected. |
| 7 | Lawson cypress | 14 (est.) | Young | 1.25 north 1 east 1.5 south 1.5 west | 1.8 | 1.5 | 7.25 | Good | 20> | C 2 (est.) | No action - in neighbouring ownership. | Well established tree in neighbouring land with a slender and well defined main stem. Suppression to the east. Not fully inspected. |

| No. | Species | Diameter @ 1.5 m (cm) | Age Class | Crown radius (m) | Height to 1st branch (m) | Crown height (m) | Height (m) | Condition / vitality | Estimated remaining contribution (years) | Category | Works | Notes. |
|-----|--------------|-----------------------------|----------------|---|-----------------------------------|------------------------|---------------|-------------------------|---|------------|--|--|
| 8 | Silver birch | 30 (est.) | Middle aged | 4.5 north4 east4 south4 west | - | 3.25 | 16 | Good | 20> | B 1 (est.) | No action - in neighbouring ownership. | Tall tree for location with a well defined main stem. Possibly partially reduced in the past - particularly to the west. Some minor scattered dead wood. Good appearance. Not fully inspected. |

Appendix 'b' Tree Location & Protection Plan



Appendix 'c' Recommended Root Protection Areas

| Tree No | Species | Recommended Distances for Root | Comments. |
|---------|-----------------------|---|--|
| | | Protective Areas (Metres). | |
| 1 | Bay | n/a | Remove to allow development. |
| 2 | Ornamental crab apple | n/a | Remove - poor quality with declining vigour. |
| 3 | Willow leaved pear | n/a | Remove - poor quality with declining vigour. |
| 4 | Silver birch | 4.5 (62 square metres - offset RPA due to proximity of boundary walls). | No disturbance required within RPA. |
| 5 | Holly | 1.5 | No disturbance required within RPA. |
| 6 | Common lime | 6.4 | As previous. |
| 7 | Lawson cypress | 1.75 | As previous. |
| 8 | Silver birch | 3.6 | As previous. |

Note 1. Root Protection Area Radii are shown in $\frac{1}{4}$ metre graduations. Note 2. It should be emphasised that the above relates to the distance from the centre of the tree to protective fencing. Note 3. With appropriate precautions, temporary site works can occur within the protected area, e.g. for access for scaffolding (see BS 5837 - 2012). Note 4. N/a = not applicable.

Appendix 'd' Extracts from BS5837: 2012

Extracts from BS5837: 2012.

6.2 Barriers and ground protection

6.2.1 General

6.2.1.1 All trees that are being retained on site should be protected by barriers and/or ground protection (see **5.5**) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see **6.2.3**).

6.2.1.2 Areas of retained structural planting, or designated for new structural planting, should be similarly protected, based on the extent of the soft landscaping shown on the approved drawings.

6.2.1.3 The protected area should be regarded as sacrosanct, and, once installed, barriers and ground protection should not be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the local planning authority.

6.2.1.4 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the project arboriculturist or local planning authority if appropriate (see also **8.8.1**).

6.2.1.5 It should be confirmed by the project arboriculturist that the barriers and ground protection have been correctly set out on site, prior to the commencement of any other operations.

6.2.2 Barriers

6.2.2.1 Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the

fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

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

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

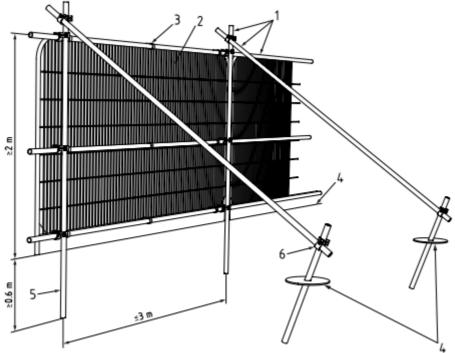


Figure 2 Default specification for protective barrier

Kev

- 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

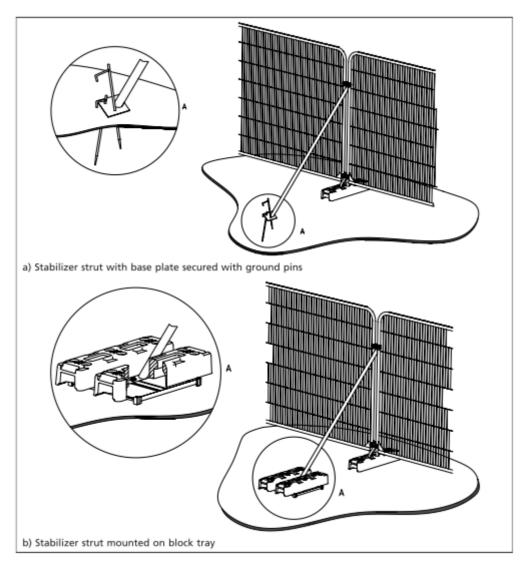


Figure 3 Examples of above-ground stabilizing systems

6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

6.2.3.2 Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see **6.1**).

6.2.3.5 In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

Appendix 'e' Table 1 from BS5837: 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, | | | | | | | | |
| Those in such a condition that they cannot realistically | including those that will become unv reason, the loss of companion shelte | viable after removal of other category U trees r cannot be mitigated by pruning) | e.g. where, for whatever | | | | | | |
| be retained as living trees in | Trees that are dead or are showing s | igns of significant, immediate, and irreversible | e overall decline | | | | | | |
| the context of the current and use for longer than 10 years | Trees infected with pathogens of sign quality trees suppressing adjacent tree | nificance to the health and/or safety of other ees of better quality | trees nearby, or very low | | | | | | |
| io years | NOTE Category U trees can have existing see 4.5.7. | 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) | | | | | | |
| Category B | Trees that might be included in | Trees present in numbers, usually growing | Trees with material | See Table 2 | | | | | |
| Trees of moderate quality with an estimated remaining life expectancy of at least 20 years | 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 | 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 | conservation or other cultural value | | | | | | |
| Category C | Unremarkable trees of very limited | Trees present in groups or woodlands, but | Trees with no material | See Table 2 | | | | | |
| 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 | merit or such impaired condition that they do not qualify in higher categories | without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits | conservation or other cultural value | | | | | | |