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Tree Report & Arboricultural Impact Assessment.

Report of survey carried out on the 12th February 2016.

Land at 6 Templewood Avenue, London NW3.

Agent: 800 Group.

Date: February 2016.

Reference: SB/JS/450.

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Land at 6 Templewood Avenue NW3. Tree Survey and Arboricultural Impact Assessment. Recommendations for Tree Protection.

1.0 Brief and Objectives

1.1 To inspect and report on one Atlas Cedar tree in the garden of 6 Templewood Avenue. The tree to be retained on the site has been identified on the attached Tree Survey and Protection Plan. The proposed development is for a new single storey extension. This tree report refers to the Proposed Plans Ground and First Floor (Dwg.PLO9) by 800 Group.

1.2 Identify and carry out a visual assessment of the structural condition of the tree and give brief recommendations for management work. The tree is recorded on the enclosed plan Dwg. No. SB/JS/450/TS and the Tree Schedule. Photographs of the tree have been appended to help with identification. A previous Tree Report was prepared for this property in November 2009 (Ref: SBA/JS/111) for another development proposal (not implemented) and this report updates the information contained in the previous report.

1.3 Having regard to the proposed development of the site, to measure tree stem girth and to calculate the Root Protection Area (RPA) in accordance with the BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.

1.4 To prepare recommendations for a Tree Protection Plan and Arboricultural Method Statements, to ensure the satisfactory protection of the retained tree throughout the construction period.

2.0 Scope / Limitations

2.1 The location of the tree shown on the appended drawing has been measured and plotted on the layout drawing provided by 800 Group. There are other trees in the garden and adjoining property but they are a good distance from the proposed area of construction and outside the zone of possible effect.

2.2 The assessment and recommendations made in this report are based on a visual assessment made at ground level only and no invasive or checking of internal structure has been undertaken.

2.3 Additional defects that are not visible from the ground level inspection may be present in the tree's root, stem and crown structure. The report does not guarantee the safety of any trees on site and Sacha Barnes Limited does not take responsibility for subsequent or future damage or injury caused by trees on the site. No guarantee can be given to the structural integrity of trees when placed under extremes of weather, especially high winds.

2.4 All comments on the tree are based on observations made at the time of the site visit carried out on the 12th February 2016. The tree was inspected in mid-Winter season conditions with good light.

3.0 Legislation - Notification of intention to carry out tree works.

3.1 It is understood that the tree is not protected by a Tree Preservation Order but the property is within the Redington Frognal Conservation Area and it is regarded as a 'protected tree'. The tree will therefore be fenced and protected throughout the construction period. Attention has been given to its amenity value, the contribution it makes to the character of the area and its local value to wildlife.

3.2 The Tree Schedule within this report includes certain recommended management works with a priority rating. The submission of this report to the Local Planning Authority shall be regarded as notification to carry out these works.

4.0 Assessment of Amenity Value

4.1 When considering trees for retention the British Standard 5837: 2012 requires an assessment to be made of their amenity value. These are normally categorised as A of High Quality, B of Moderate Quality and C of Poor Quality. (Refer to attached Table 1 – Cascade chart for tree quality assessment). Trees that are dead or in a dangerous condition and should be felled are given a U rating. Trees that have to be removed for the new development are also given a U rating. Cedar tree T1 is a good specimen and is quite prominent as a feature of the Conservation Area and has been given an A rating.

5.0 Tree canopies and Root Protection Areas - Site access and the protection of trees within the Construction Exclusion Zone.

5.1 The measured tree canopy and Root Protection Area for Cedar tree T1is shown on the Tree Survey and Protection Plan. RPA's should be regarded as Construction Exclusion Zones unless development has been permitted within this area and special measures of mitigation are taken. Based upon the recommendations of BS 5837:2012, the Root Protection Area (RPA) is calculated at a certain radius from the base of the tree. This is the minimum area in m^2 that should be left undisturbed (without special measures of mitigation). The RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees when measured at 1.5 metres above ground level. The crown spread should not be used as a guide to the possible extent of major roots.

5.2 Unless special measures of surface protection are used or existing hard surfaces are retained the whole of the RPA shall normally be fenced and protected from any disturbance and excavation during the construction period. In this situation the proposed construction is contained within the existing hard patio area and most construction operations will be carried out from this existing hard surfaces. Ground levels below the tree and within the Construction Exclusion Zone will remain as existing apart from the excavation required for the pile and beam form of foundation construction. See Method Statements below.

6.0 Measured Root Protection Area

6.1 The Root Protection Area for the retained tree has been plotted on the Tree Survey and Protection Plan. This is based upon the tree stem diameter and measured as a radius from the centre of the tree.

Tree Number	RPA Radius (m)		
T1	7.8m		

7.0 Soils and Foundations

7.1 The soil type is understood to be a medium clay loam but the depth and nature of any underlying clay is not known at the time of this survey. A trial pit has been dug within the area of the stone patio and this has revealed a depth of concrete and a hard-core sub base to a depth of approx. 350mm and below this level the ground appears to have been disturbed at some time with further brick and stone debris. Minor roots of less than 10mm diameter have penetrated through the hard-core material. There were no roots found below a depth of approx. 400mm. Refer to the attached photographs of the trial pit.

8.0 Tree Schedule Description

8.1 Please refer to each of the paragraphs on the Tree Schedule.

- The Tag Number identifies the tree and refers to the number and location on the Tree Survey Drawing (Note: Trees have not been physically tagged or numbered on site).
- The Species column gives the common and botanical name of each tree.
- The Height column records the height of each tree measured as the overall height from ground level.
- The Stem Diameter is then measured at 1.5m above ground level for single stem trees.
- The ground clearance to canopy is the height between the ground and the first major limb.
- The Tree Spread records the maximum spread of the tree canopy at the four cardinal points.
- The Age Class is normally given as either young, early mature, mature or over mature.
- The Life Expectancy is given as the estimated timescale before the tree seriously declines and may have to be felled.
- The Physiological and Structural Condition is a record of certain factors that have been identified for attention, it is not a comprehensive diagnosis.
- The Management column lists the main and most urgent management works required to address any structural condition that could cause a hazard or problem on the site. This may also include a recommendation for more detailed and more frequent monitoring of the tree.
- The BS Classification gives an individual amenity rating in accordance with BS 5837: 2012.
- The Priority column is a recommendation of whether the work required is of High, Medium or Low Priority. In the context of proposed construction or demolition work, any essential pruning has been given a high priority.

9.0 Arboricultural Impact Assessment

9.1 The Arboricultural Impact Assessment has considered the practical issues involved with the site preparation, removal of the existing hard surfaces, and the excavation and construction work in proximity to the tree. It has identified the following 'potential' risks. Each of these potential risks is then addressed and answered in the Method Statement Recommendations that follow.

a) Damage to tree stem and overhanging branches caused by the operation of machinery and tall vehicles such as the piling rig that will be used for the ground works and foundations, also the delivery and lifting of scaffolding, building materials and the construction work.
b) Damage to tree roots and tree health caused by the passage of vehicles and the rutting and compaction of soils. Also the erection of fencing and frequent passage of pedestrians / site operatives.
c) Damage and severance of roots caused by the excavation and piling for foundations, laying hard surfaces and the installation of utilities. The existing ground levels within the tree Root Protection Area will be kept as existing as far as possible. Where required, levels will be made up using porous granular materials. Protective barrier fencing will be erected immediately on the edge of the construction area and adjoining hard surface. The Project Arboriculturalist will check that the line of the excavation is marked and the protective fencing is in place before any excavation takes place.
d) Damage caused by accidents, inadequate controls within the Root Protection Area and lack of awareness by site operatives.
e) Damage to tree stem, root and branches and contamination of soils caused by the operation of machinery and storage of plant and machinery and materials.
f) Damage caused to tree roots by lack of moisture and air caused by soil compaction and the use of sealed and impermeable paving materials.
g) Damage caused by the lighting of fires too close to trees causing scorching, the desiccation of soils and drying / burning of roots.

10.0 Method Statement Recommendations - For the Protection of Trees during construction.

10.1 The following paragraphs are a strict guide to the measures of protection required to ensure the proper protection of the Cedar tree. They shall be applied to all future construction and building operations.

a) Programme of Supervision and Monitoring of Protection (See method statement section attached) - The Project Arboriculturalist must be involved in the site preparation and construction work at the earliest stage to brief the main contractor and site operatives on the importance of compliance with the method statements set out in this report. Then to be in attendance at the key stage of ground-work, excavation and the start of construction work for the new extension. The new foundations will encroach within the tree Root Protection Area but the roots of the tree are restricted by the hard base of the existing stone patio and the severance of minor fibrous roots will not be detrimental to the tree's health and stability.

b) Tree Pruning and Management - Prior to the commencement of building operations, the tree management work identified in the tree schedule shall be carried out.

c) Protective Barrier / Fencing – Construction Exclusion Zone – The trees shall be protected in accordance with BS 5837:2012 Trees in relation to design,

demolition and construction - Recommendations. On completion of any essential tree surgery works and before any further development works are started on site (including all ground works, scraping of top soil) protective 'Heras' fencing or scaffolding work (see attached detail) shall be erected on the alignment shown on drawing SB/JS/450/TS. This shall be erected and then inspected by the supervising agent before any materials or machinery is brought onto site and before any ground works are commenced. Once erected the protective barrier / fencing shall be set aside while the Low Impact Surface is laid and then it shall be replaced on the approved alignment. The construction of the proposed extension to the building, will require an incursion into the Root Protection Area but this represents less than 5% of the entire root area. With appropriate measures of mitigation this degree of disturbance is considered tolerable and measures will be taken to reduce root severance with the design of special foundations.

d) Site Compound – Erection of site huts, delivery and storage of machinery and materials and parking of vehicles – Temporary cabins have been positioned on the stone patio area. The stone patio is very well constructed and the weight of the cabins is not likely to impact on the tree roots below. No other materials, machinery, site huts, fuel oils or chemicals shall be stored within the fenced Construction Exclusion Zone. The site compound /storage area and parking area must also be sited outside the Root Protection Areas. All materials delivered to and stored on site will be contained within this compound. Measures will be taken to prevent the seepage or spillage of fuel oils and other liquids beyond the site compound. The contractor must be aware of the restricted height clearance caused by the overhanging tree. Then to make sure that tall vehicles delivering machinery and materials are met on arrival at the site entrance and carefully guided into the site by a 'banksman' to avoid causing any damage to low limbs and overhanging branches.

e) Lighting of Fires - No fires shall be lit within 15 metres of any protected tree. This distance will need to be greater if there is any likelihood of strong winds. The contractor shall seek advice from the District Council Environmental Services before lighting any fires.

f) Notices – Tree protection notices shall be fixed to the protective fencing where they can clearly be seen from all approach angles. They shall also be displayed in site huts making it clear to all site operatives and visitors that the tree is protected. See attached detail of a typical notice.

g) Protection of tree roots – No excavations for foundations and construction shall be made within the fenced Construction Exclusion Zone. Where excavation is essential in order to comply with Planning Permission, great care shall be taken to protect tree roots. Great care must be taken not to sever exposed roots greater than 25mm diameter. Should any roots of this size be found within the construction area they must be left intact and advice sought immediately from the Project Arboriculturalist. Any minor roots found within the permitted construction area that have to be cut, shall be cut clean with a sharp knife or secateurs. Should there be any delay in backfilling the excavated pits during dry or frozen conditions the face of the exposed soil shall be covered with wet hessian and kept damp to prevent the soil and roots from drying out. It is recommended that the sides of excavated foundation pads near to the tree should be clad with a plastic 'slip' membrane before being filled in. This will help to deflect growing roots away from the new foundations.

h) Surface treatment below trees and no dig construction - It is important that the ground below the trees remains porous and well drained, allowing air and moisture to the tree roots. It is understood that there will be no additional hard surface laid beyond the existing stone patio and garden path.

i) Pedestrian access and working within the RPA - For the construction and building works it will be necessary for pedestrian access to be taken within the Root Protection Area. Wherever possible pedestrians / operatives shall gain access and work off the existing stone patio and paths. The majority of this area beyond the stone patio is soft ground and this will need to be protected from heavy compaction. Where occasional access is required over soft ground the surface shall be protected by scaffolding boards. A single thickness of boarding will be sufficient for pedestrian loads. The ground beneath the boarding should be left undisturbed and is to be protected with a geo-textile fabric. If necessary, sand should be laid on the fabric to level the ground. The boarding should be left in place until the excavation and construction works are completed.

j) Construction within the RPA – Construction requiring measures of excavation in the vicinity of trees should normally be avoided if at all possible but when it is established that no alternative options are available other than to construct within the Root Protection Area hand digging is recommended (refer to Method Statement – Hand digging in the vicinity of trees). In this case specially designed foundations shall be used that minimise the area and depth of excavation. This will be an essential requirement for the part of the new build that comes within the RPA for the Cedar tree T1. Commonly referred to as Pile and Beam foundations this involves drilling the piles and then building off the supporting beam that is laid at just below existing ground level supported by the concrete piles. The number and size of the piles should be kept to the minimum required and should not exceed 500mm square. The pile foundations and beam shall be designed by the Architect / Engineer and agreed by the Project Arboriculturalist.

k) Services and Utilities – New services will be routed to cause the least possible disturbance to tree roots. They should normally avoid having to cross through a Root Protection Area but where this cannot be avoided the services must be grouped together along a narrow trench that will be excavated by hand in accordance with the construction method statement as set out in the report. See Method Statement – Hand digging in the vicinity of trees.

11.0 Tree Pruning / Management Operation Recommendations (Refer to Tree Schedule).

There is a small amount of dead wood in the crown of Cedar tree T1. The recommendation in the tree schedule is for the dead wood throughout the crown to be removed. The tree work shall be carried out in accordance with BS3998: 2010 'Recommendations for Tree Work' and in compliance with current industry best practice.

12.0 Ecology / Wildlife Interest

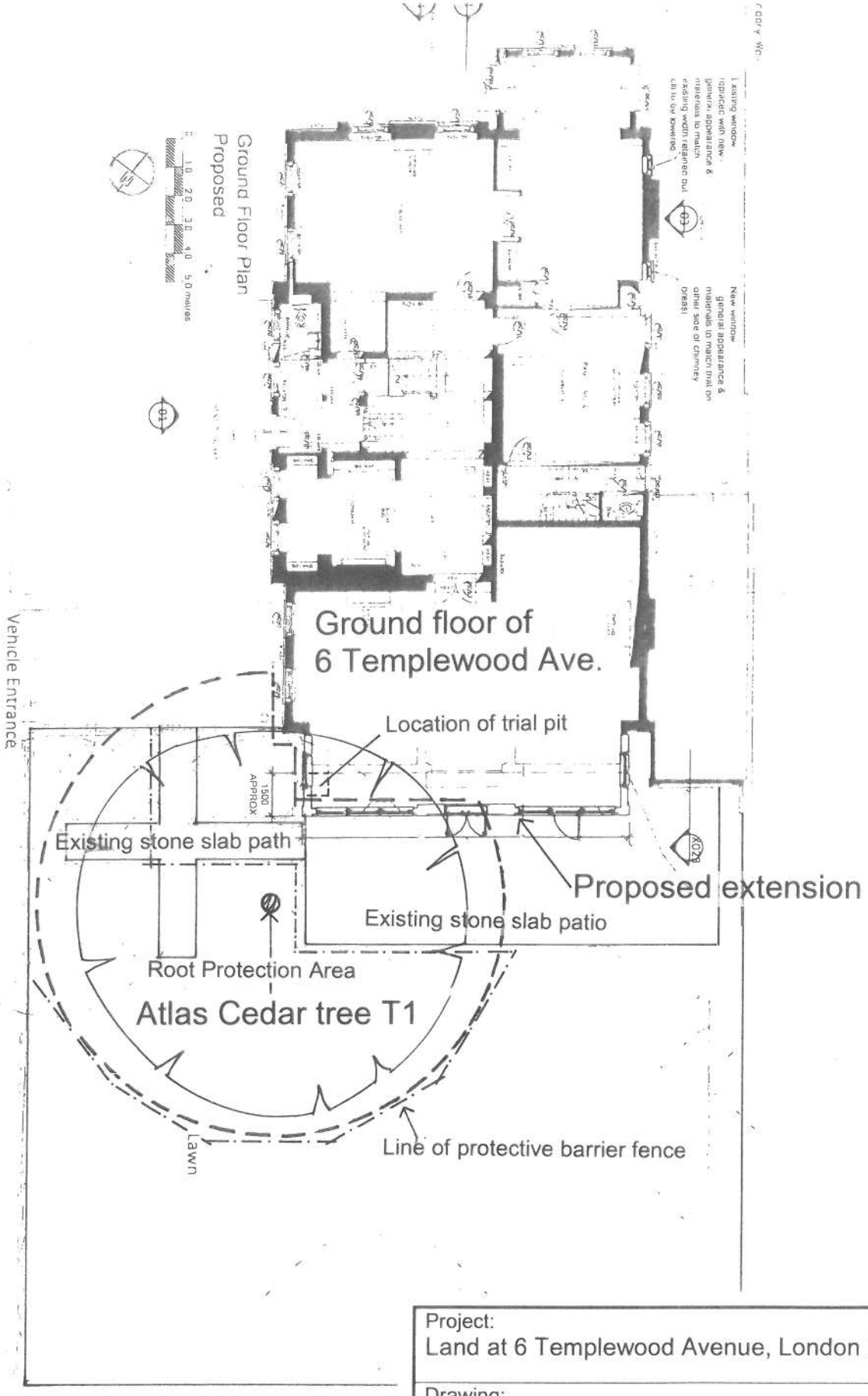
12.1 The arboricultural brief did not require a detailed survey of fauna and flora within the site and on inspection it is very unlikely that Cedar tree T1 is being used by bats or owls for roosting / nesting. All tree works must be carried out and completed during daylight hours when bats are not in flight. If possible, non-urgent tree works should be carried out before or after the bird nesting season, between the middle of March and the end of August.

13.0 Conclusion

13.1 I have inspected the Cedar tree T1 and carried out a thorough Arboricultural assessment. I have inspected the trial pit that was dug to determine the possible presence of roots within the area of the proposed construction and I am satisfied that the few fibrous roots that were visible were very minor. The potential loss of roots within the area of construction will amount to less than 5% of the total root area and I believe this minimal level of root disturbance will not be of any serious detriment to the tree. I have discussed the detail of the pile and beam foundation with the Developer and I am satisfied that this will have the least detrimental effect on the tree. Provided the method statement recommendations given above are followed there should be no arboricultural reason for objecting to the proposed construction of the single storey extension.

Tree Schedule – 6 Templewood Avenue NW3.

Tag No.	Species	Height [m]	Stem Dia. [mm]	Ground Clearance to Canopy	Tree spread (m)				Age Class	Life Exp (Y)	Physiological and structural condition	Management	BS 5837 - 2012 classification	Priority
					N	E	S	W						
T1	Atlas Cedar *Cedrus atlantica*	**14**	**650**	**6.0m**	**6.8**	**7.4**	**6.5**	**6.3**	**Mature**	**>30**	Good form with moderate vigour. Slight lean to north. Main stem forks at 8.5m. Past pruning has raised crown to 6.0m. Roots part restricted by stone slab patio on the north side and stone slab path on the west and south sides. Minor dead branches throughout crown. (Subject to proposed construction of extension to dwelling within footprint of existing stone patio area).	Remove minor dead branches. (Protect within context of proposed construction work).	**A**	High



Project: Land at 6 Templewood Avenue, London NW3.	
Drawing: **Tree Survey and Protection Plan.**	
Scale: 1:200 @ A4	Date: February 2016
Drawing No. SB/JS/450/TS	

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Drawing based on proposed layout plan by 800 Group.

Photographic record

Photograph 1 – Cedar tree T1. The site cabins have been placed on the stone patio surface for the duration of the construction work. The protective fencing is a temporary measure and will be moved out to protect all the soft ground within the Root Protection Area.

Photograph 2 – Looking down the side of the building and the location of the proposed single storey extension. The stem of the Cedar tree to the right of photograph.

Photograph 3 – Looking into the trial pit dug on one corner of the proposed extension. Only a few minor fibrous roots have extended below the hard-core base of the stone patio.

Photograph 4 – A closer view of the trial pit showing the fibrous roots and the layers of concrete, hard-core and stone debris below the surface of the stone patio.

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Method Statement – Hand digging in the vicinity of trees.

1.0 Tree/Root Damage – How it can occur

1.1 The majority of tree roots exist in the upper 600mm to 1000mm of soil. Excavations of the soil in the vicinity of trees can be harmful to tree roots and consequently the tree.

1.2 Tree root systems comprise two main root types, those that anchor the tree in the ground and those that supply the tree with water and elements. Roots that support the tree are woody and those that are involved with the conduction of water and nutrients are non-woody or fibrous. Both types of roots can be damaged directly by severing or crushing. Fibrous roots can die from asphyxiation by soil compaction and/or soil contamination. Trees differ in their tolerance of root loss or disturbance, according to their species and condition or both.

1.3 Generally the larger the root damaged, the greater the impact on the tree.

2.0 Hand Digging in the Vicinity of Trees – the Process

2.1 First it is necessary to consider all available options to construct beyond the likely range of influence or the area below the tree's canopy. (Refer to Table 1 of BS 5837:2012 'Trees in relation to design, demolition and construction Recommendations'). This area is called the Precautionary Zone or Root Protection Area. When it is established that no alternative options are available other than to construct within this zone, hand digging will be needed. When considering hand digging, an appointed arboricultural supervisor/consultant must be on site at the commencement of work.

2.2 Before beginning to dig, mark out the precautionary area with ground marker paint, clearly on the ground. This will identify the area within which hand digging must take place. For safety, ensure there are no underground services that may cause injury if damaged. Any existing protective fencing is to be located to the nearest position of construction and fixed in place, between the tree and area of construction. It will be clearly visible to operators thereafter where hand digging will need to be undertaken. The use of mechanical digging equipment to remove the top surface layer (50-100mm) is to be avoided and hand tools are required for this exercise too.

2.3 When hand digging using typical hand tools, carefully work around roots, retaining as many as possible. Using a brush will expose roots cleanly before deciding whether it will be necessary to prune. Care must be taken not to damage roots including the roots' bark.

2.4 Retain all roots with a diameter greater than 25mm. Where such roots must be removed, after consulting the arboriculturalist (e.g. Local Authority Tree Officer or the appointed Consultant), these roots must be pruned with sharp cutting tools such as a handsaw, secateurs or pruners. The cut must leave the smallest wound possible and the root must be left as long as practicably possible. All roots in excess of 50mm diameter are to be retained and protected by surrounding the root with un-compacted sharp sand, void-formers or other compressible materials.

2.5 Where it is obvious that roots do not exist e.g. beyond the extent or depth of the rooting area, mechanical excavation should only be considered with specialist arboricultural supervision.

2.6 All spoil is to be deposited beyond the precautionary zone. Soil build-up can cause root damage and die back.

2.7 As soon as practicable, exposed roots are to be covered with loose backfill material such as soil/sand mix to offer immediate protection. When excavating for the introduction of posts, pads or piles, the sides of the pits should be lined with a geotextile material to prevent the potential for lime scorching of small diameter roots.

2.8 Where it is not possible to complete the construction in one day, any exposed roots or their cut ends are to be covered with damp sacking material to prevent drying out and to add protection. This is particularly important in winter months, where frost can cause further damage to roots.

2.9 Upon completion of the hand digging, protection fences are to be re-located and fixed in their original position.

Also see the National Joint Utilities Group publication V4 2007 'Guidelines for planning installation and maintenance of utility services in proximity to trees'. In addition Table 2 from BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'

Before considering hand digging within the precautionary zones or root protection areas, specialist arboricultural advice must be sought.

Programme of Supervision and Monitoring of Protection.

Programme
The following programme of supervision and monitoring is governed by operational constraints and subject to change. The Project Aboriculturalist must be given prior notice of any changes to the schedule. (See Arboricultural Supervision / Monitoring Description below)

Phase 1 – Pre development stage

- Pre-commencement site meeting between Project Arboriculturalist, (PA); Project Manager, (PM); Project Architect (Arch); Site Manager (SM) and Contractor (Con). The Local Planning Authority (LPA) shall be informed and given the opportunity to attend.
- Permitted tree removals / pruning of trees directly or indirectly impacted by development.
- Induction and arboricultural awareness meeting with the above and all site operatives. Copies of the Summary of Tree Protection Measures shall be issued.
- Installation of all ground protection measures including fencing, signage and ground protection measures in accordance with the requirements of the Tree Report / Methodology Statement.
- Final Inspection and signing off of all tree protection measures by PA. To be recorded on the Site Monitoring Report Sheet.

Phase 2 – Development construction stage

- Phase 2 is subject to monthly monitoring visits by the PA. These inspections may become more frequent if considered essential by the PA or as required by the PM, Arch, SM, Con or LPA.
- Daily inspections and monitoring of the tree protection elements will be the responsibility of the PM, SM or Con. The Project Arch should also check on these measures when visiting the site. Any changes, adjustments of damage caused to the tree protection measures shall be recorded on the Site Monitoring Report Sheet and this shall be signed and retained on site as a site record. The PA, Arch or LPA may ask for a copy of these records at any time.
- All the above personnel will have delegated powers to require the immediate reinstatement / repair of any tree protection measures that may have been damaged or breached by construction work.
- Access to site by vehicles will be via the identified entrance / entrances. (These will normally be shown on the Project Arch's site plan or the PA's Tree Protection Plan.
- Installation of site compound / huts / WC / materials / fuels, must be outside of all exclusion areas shown on the Tree Protection Plan. (These will normally be fenced).
- Temporary ground works and services - No ground works or underground services are permitted within the tree protection areas. No temporary overhead cables, pipes or services shall be routed through the tree protection areas unless first approved by the PA. This shall be recorded on the Site Monitoring Report Sheet.
- Start of demolition /groundwork/ excavation - The PM or SM shall give the PA and LPA seven days notice of the start of any demolition, groundwork or excavation on site.
- Completion of development construction stage and reinstatement. – The PM shall inform the PA of the completion of the development construction stage and none of the tree protection measures shall be removed until the PA has signed them off on the Site Monitoring Report Sheet.

Phase 3 – Post development construction stage.

- Removal of protective fencing and protective surfacing and reinstatement of site.
- Final inspection and signing off of all tree protection measures by the PA.
- Landscaping contractor / operatives briefed by the PA.

Arboricultural Supervision / Monitoring Description.

Arboricultural monitoring involves the inspection of the site works, the trees, tree protection measures and the completion of the Site Monitoring Report Sheet. The S.M.R.Sheet must be signed by the Project Arboriculturalist (PA) and Project Architect, Project Manager (PA) or Contractor (Con). If required, copies will be posted to the Local Planning Authority (LPA).

The monitoring visit is to ensure that the approved tree protection measures are continually adhered to and if remediation is required, that this is promptly addressed and made clear to all parties.

Arboricultural supervision is to be carried out at all crucial stages in the Development Programme to ensure detailed tasks are carried out in accordance with the requirements of the Tree Report / Methodology Statement. At all points as detailed above and especially during:

- Remedial tree works as recommended within the Tree Report.
- Erection of tree protection fencing. (See detail within Tree Report).
- Any demolition or excavation near to the edge of Root Protection Areas.
- Hand excavations for any tree protection fencing posts.
- Any essential temporary incursion into the RPA's / Construction Exclusion Zone.
- Any exposure and pruning of roots over 50mm diameter found within excavations.

This supervision will require the PA to be present throughout the task, to ensure all the arboricultural objectives are met. If the task is to take a long period of time, provided the PA is satisfied, the supervision may be reduced to telephone contact between the PA and PM or Con.

The LPA Arboriculturalist will have free access to the site (site security and health and safety requirements to be observed at all times) and will pass any recommendations to the PA or PM.

Remedial tree works as recommended within the Tree Report should normally be carried out prior to the erection of the tree protective fencing, however, it may be expedient to mark out the extents of any fencing and essential access to indicate if any crown lifting will be required.

Temporary site access across any areas designated for low impact (no dig) measures may be achieved by use of the Cellweb construction (See description within Tree Report). Any temporary protective surfacing must be capable of supporting the expected loads to avoid compaction, rutting or disturbance to soil within or close to the Root Protection Areas.

The PA will inspect the removal of any temporary surface within Root Protection Areas (Where applicable) and the reinstatement with top soil. The PA will sign off the final Site Monitoring Report Sheet when all reinstatement has been completed.

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).

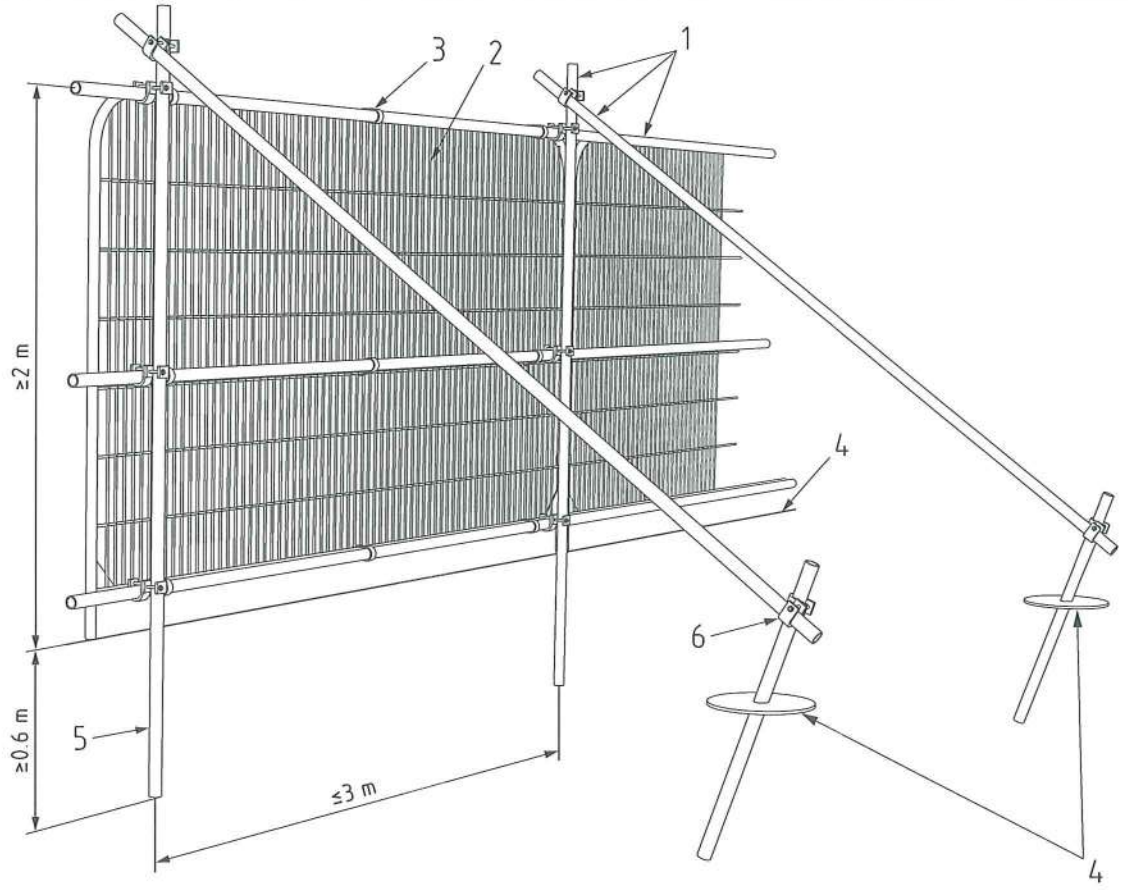
NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

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:

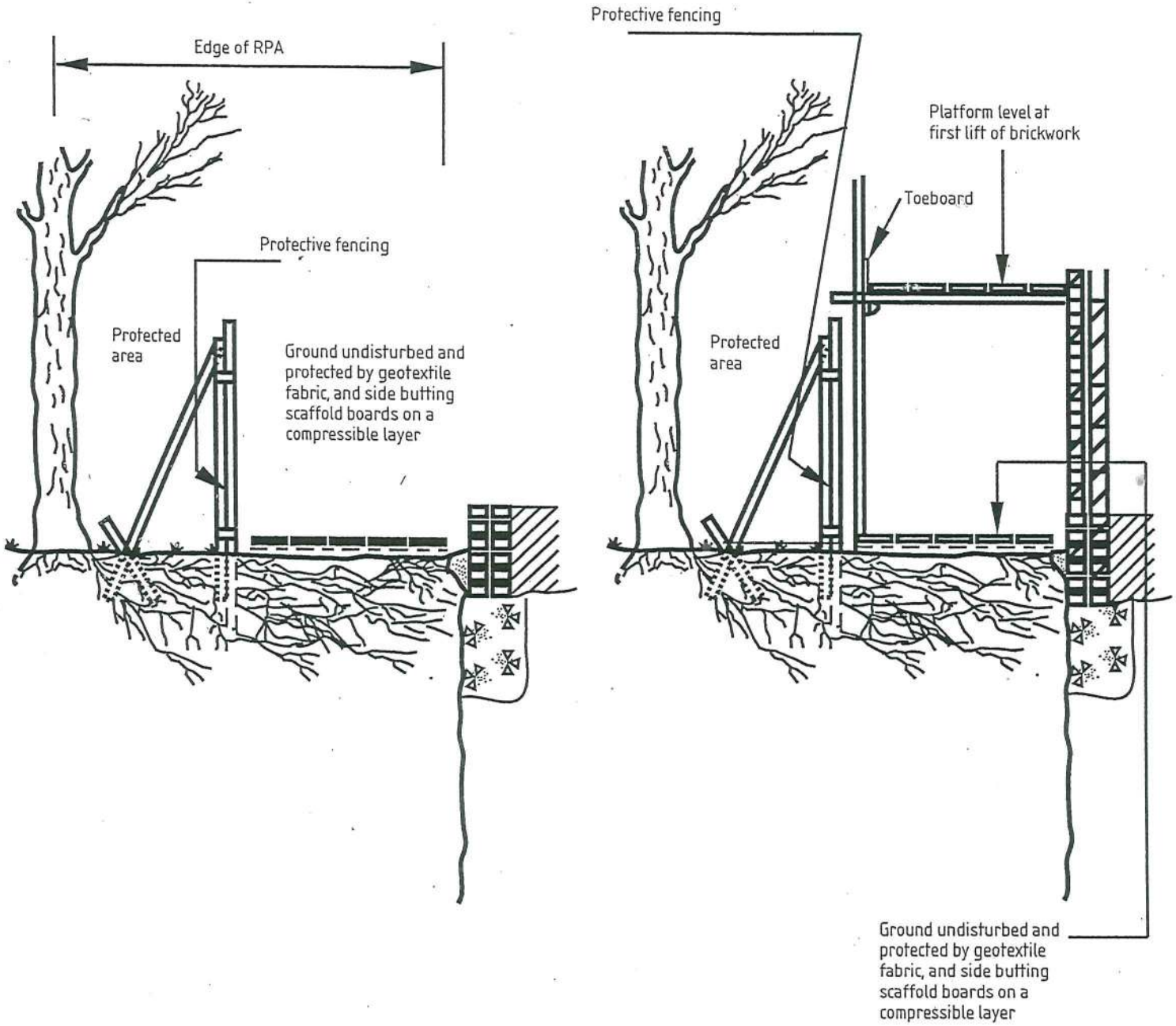
"CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Figure 2 **Default specification for protective barrier**



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



Scaffolding within the RPA

Example of Tree Protection Sign.

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

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