

<b>JESTICO + WHILES</b>		
JW	H	Ret:
1 X DEC 2007		
Circulate/Action:		

**Simon Pryce, Arboricultural Consultant**

## **Report**

**Client:** Philip Cave Associates

**Site:** Land at rear of Prime House, Finchley Road, London, NW3

**Subject:** Trees and proposed building work

**Inspection date:** 22 November 2007

**Report date:** 7 December 2007

**Reference:** 07/191

**Author:** Simon Pryce, B.Sc., F.Arbor.A, C.Biol, M.I.Biol, MICFor  
Arboricultural Association Registered Consultant

## **I Introduction**

- 1.1 This report has been prepared on the instructions of Philip Cave Associates, who are acting for the owners of the site.
- 1.2 I have been asked to inspect a mature sycamore and four other trees growing near the boundary, assess their condition and amenity value and the arboricultural implications of the proposal.
- 1.3 The site was visited and the trees inspected on 22 November 2007. The inspections were visual and made from ground level, with no climbing or test boring.
- 1.4 This case is discussed below and the trees are listed in the attached schedule with dimensions, retention categories and recommendations for any necessary or appropriate work, as specified in British Standard 5837: 2005, Trees in Relation to Construction. The supplied drawings show the trees numbered from a previous survey and this scheme has been used here in order to avoid confusion.

## **2 Background**

### **Site**

- 2.1 The site concerned is about 30m from east to west by about 12m north to south. Access is from the western end, which opens onto the slightly lower main car park behind Prime House. To the north is a piece of ground containing a number of middle aged trees, while the other two sides are bounded by rear gardens of 19 and 17 Frognal. There is currently a single storey flat roofed brick building at the western end of the site near the southern side. The rest of it is tarmac surfaced and currently used for storage.
- 2.2 The existing building has some severe diagonal cracking in the end walls, the pattern suggesting downward movement of the southern wall. There are a number of possible causes for this, one of the more likely ones being subsidence due to shrinkage of the clay sub soil caused by tree roots.

### **Proposal**

- 2.3 This is shown on drawings produced by Jestico + Whiles and involves demolishing the existing building and replacing it with a new building occupying most of the southern side of the site. This has two main storeys and a lower ground floor, with an overall height from ground to roof of approximately 12m near the centre. The lower ground floor is set back about 3.5m from the southern boundary with the upper floors cantilevered out above this to about 1m from the boundary.

## **3 Trees**

- 3.1 The five trees concerned are in gardens to the east and south of the site and are number 17 - 21 on the previous survey. The most significant is no. 20, a mature sycamore about mid way along the southern boundary of the site. Others are a small cherry plum west of no.20, a sycamore to its east and a Norway maple and pink horse chestnut near the eastern boundary. These are described in more detail in the attached schedule.

- 3.2 The two sycamores are both carrying very heavy growths of ivy which, combined with limited access, prevented a detailed inspection. Tree 19 appears reasonably healthy, if not very vigorous but is possibly growing from a stump, which can lead to decay and structural weakness at the base. Tree 20 has a narrow fork at 2.5m; these often have ingrown bark which prevents a lateral connection from forming between the stems and makes trees liable to split. Also the branch structure, with numerous small limbs, suggests that it might have been topped in the past, which can lead to decay in the old pruning cuts. However it is not possible to draw any firm conclusions on either point without clearing the ivy.

## **4 Appraisal and discussion**

### **General comments**

- 4.1 The two main functions of tree roots are 1) physical support and 2) the supply of water and nutrients from the soil. Roots will grow wherever conditions are favourable i.e. there is a suitable supply of air and water, so most tend to be in about the upper 600mm of the soil and even shallow excavation can be damaging. Construction work near trees can be harmful in other, less direct ways, for instance soil compaction caused by heavy machinery and by spillage of toxic substances such as diesel oil and cement.
- 4.2 British Standard 5837: 2005, Tree in Relation to Construction – Recommendations, specifies measures to avoid or minimise damage to trees that are retained on or near construction sites. One of the more important recommendations is that root protection areas [RPAs] are established round retained trees and that no ground work takes place within them. These are normally enclosed by suitable fencing such as weld mesh sections supported by scaffold poles driven into the ground. The size of the RPA is based on the size of the tree concerned. The starting point is that for a single trunked tree it is a circle with a radius 12 times the trunk diameter at 1.5m, while with multiple trunked trees the area is equivalent to a circle 10 times the radius just above the root collar. In either case the shape and layout of the RPA can be modified, if this is deemed appropriate by a suitably qualified arboriculturalist.

### **Implications of the proposal**

- 4.3 In this case the new building falls within the RPAs of trees 17, 20 and 21.
- 4.4 With tree 17 the area affected is a significant part of the RPA, but the tree is in poor condition and has a severely limited safe useful life expectancy. If it is retained a small amount of crown pruning would be required to accommodate the building superstructure, but this would be limited to a few minor low branches.
- 4.5 In the case of tree 20 the proportion of the RPA crossing the boundary into the site is small and the tree has almost unlimited space for root growth in other directions, so it is highly unlikely to be affected adversely by ground work. Crown overhang into the site is also minimal, so only minor pruning would be required.
- 4.6 With tree 21 a larger part of the RPA extends into the site. The comments below apply if it is retained, but its condition is not entirely clear at present and there is evidence that it has defects that might well warrant felling. Even with the ivy cleared it would not be a particularly good specimen. The existing building will restrict root growth to some degree, but the cracks in the walls suggest that at least some roots have grown into the clay under the foundations. However at this range these will be the fine absorbing roots rather than main structural ones and the loss of a moderate amount of these will not affect the tree adversely. At this point the nearest section of the new building is set back, so the foundations are just outside the RPA, with the upper storeys cantilevered towards the boundary. Some work will inevitably take place within the RPA, so the ground will need to be protected while this is in progress and any new surface will need to be permeable and laid with minimal or no excavation.

- 4.7 In addition the tree's crown will need to be pruned to clear the upper storeys of the new building. This would involve complete removal of some of the lower and mid height branches on the north side and some pruning of the south side would be advisable. It would be left somewhat one sided, but the new building would make this less apparent and it is not uncommon in trees near large structures.

### **Tree work**

- 4.8 Any treework should be carried out in accordance with BS 3998: 1989, Recommendations for Treework, and any other relevant standards. It is essential that the contractor doing the work has appropriate third party and public liability insurance. Ivy can be dealt with by cutting the stems just above ground, leaving a gap of about 1m, following which it dies and disintegrates.

### **Restrictions**

- 4.9 Camden Council's web site indicates that the trees are in the Redington/Frogna Conservation Area, so the council must be given six weeks notice of any proposed felling or pruning of trees over 75mm diameter at 1.5m. They can allow this either by confirming in writing that they do not object or by letting the six weeks elapse without making a tree preservation order [TPO], which is the only way they can prevent work of which they do not approve. In this case or if trees are already protected it is necessary to make a formal application for the work. If this is refused it is possible to appeal and in some cases to claim compensation for any consequent loss.
- 4.10 There are some relevant exemptions from this:
1. Removing or making safe any trees that are dead, dying or which have become dangerous does not need consent but in such cases the council must be given five days notice. There is a requirement to plant a new tree in the same place unless the council agree otherwise.
  2. Any work *immediately* required to implement a proposal that has *full* planning permission is deemed to be covered by the planning permission for the development.

### **Ownership**

- 4.11 The trees concerned belong to other parties, so there is no direct control over them. The common law right to cut overhanging growth back to the boundary applies also to roots, but does not override Conservation Area or other planning restrictions. Pruning overhanging growth back to the boundary would clear the new building and would not need the agreement of the tree owners, although in order to be consistent with recognised arboricultural good practice it would be necessary to cut back beyond the boundary to the parent limb or trunk, which would need the owner's agreement.
- 4.12 There have been no reported cases setting a precedent for the legal position if the exercise of this right damages or kills the tree concerned, although it appears likely that the person doing the cutting would be liable. In this case it is important that trees 20 and 21 are inspected more closely to assess their condition and the responsibility for this would rest with their owner.

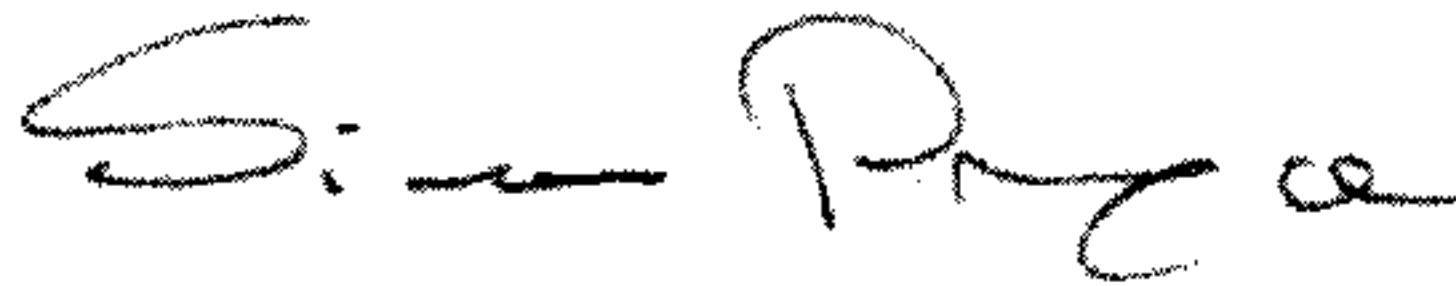


### **Foundation design**

- 4.13 From experience of numerous tree related subsidence cases in the area, some within 200m of the site, the local subsoil is London clay, which has a high potential for shrinkage and swelling with changes in moisture content. The foundations will need to be designed to resist any likely shrinkage caused by the trees and, as they are likely to decline and die within the serviceable life of the building, for any soil swelling or heave after they are removed.

### **Tree protection measures**

- 4.14 The method statement below sets out the general methods and techniques to be employed, although this might need to be amended once the layout is finalised.

A handwritten signature in black ink, reading "Simon Pryce". The signature is written in a cursive, flowing style.

Simon Pryce B.Sc, F.Arbor.A, C.Biol, M.I.Biol, MICFor  
Arboricultural Association Registered Consultant

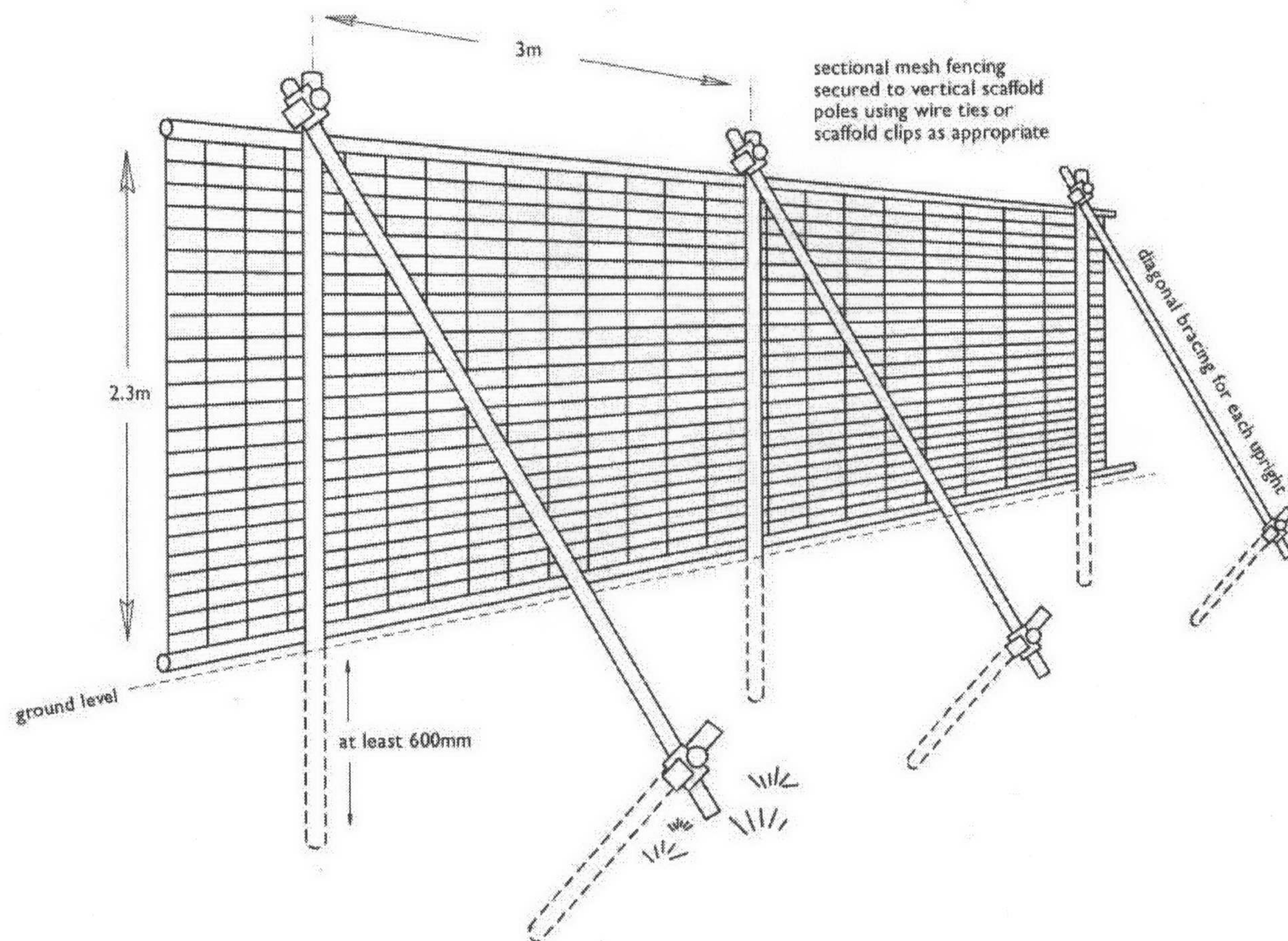
## **General tree protection method statement**

This document is to be read in conjunction with the survey report. Any queries are to be referred to the arboriculturalist.

1. Before any demolition or construction work commences the contractor and arboriculturalist are to agree all work affecting trees, particularly protective fencing, access and storage routes. In this instance access will be from the western end of the site and storage on the existing hard surface north of the new building.
2. Any tree works detailed in the arboricultural survey report and any other necessary pruning or felling are to be carried out, subject to obtaining any necessary statutory consent and agreement of the owners.
3. Protective fencing is to be erected so as to provide continuous barriers round any trees to be retained. In this case this will be at or near the site boundaries. This is to be 2m high plywood sheeting or sectional mesh [ e.g. Heras] fencing on a scaffolding framework.
4. No protective fencing is to be moved or dismantled without the agreement of the arboriculturalist.
5. No work is to take place within the RPAs without the prior agreement of the arboriculturalist and without suitable alternative protective measures.
6. No materials of any kind are to be stored within RPAs.
7. Potential contaminants such as diesel oil, cement and bitumen must be stored at least 10m from any trees, with provision made for any spillage or run off to be contained away from protected areas.
8. Cement and concrete mixing must take place at least 10m from any trees, over a suitable hard surface to prevent soil contamination from spillage or washing out.
9. Any fires must be only in approved areas well away from trees, as directed by the arboriculturalist and in accordance with any relevant legislation.
10. If any roots over 25mm in diameter are encountered or damaged during excavation they are to be cut cleanly back to sound wood. If there is any doubt they should be covered to keep them moist and the arboriculturalist consulted before any further work that might affect them takes place.
11. Protective fencing is to remain in place until all demolition, construction and hard landscaping are complete.
12. Following this any necessary final pruning or other tree work is to be carried out.



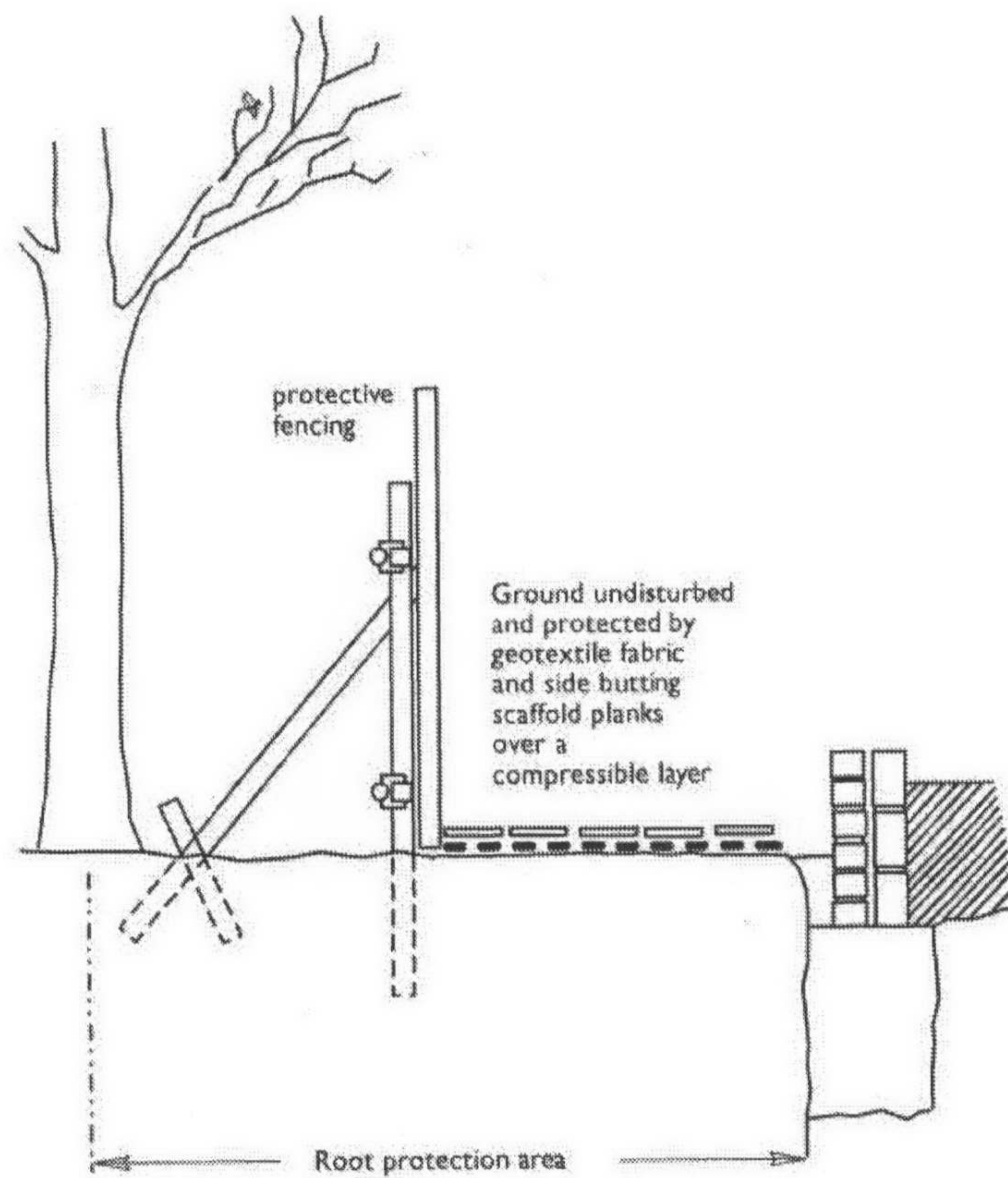
Protective fencing details, after BS5837: 2005



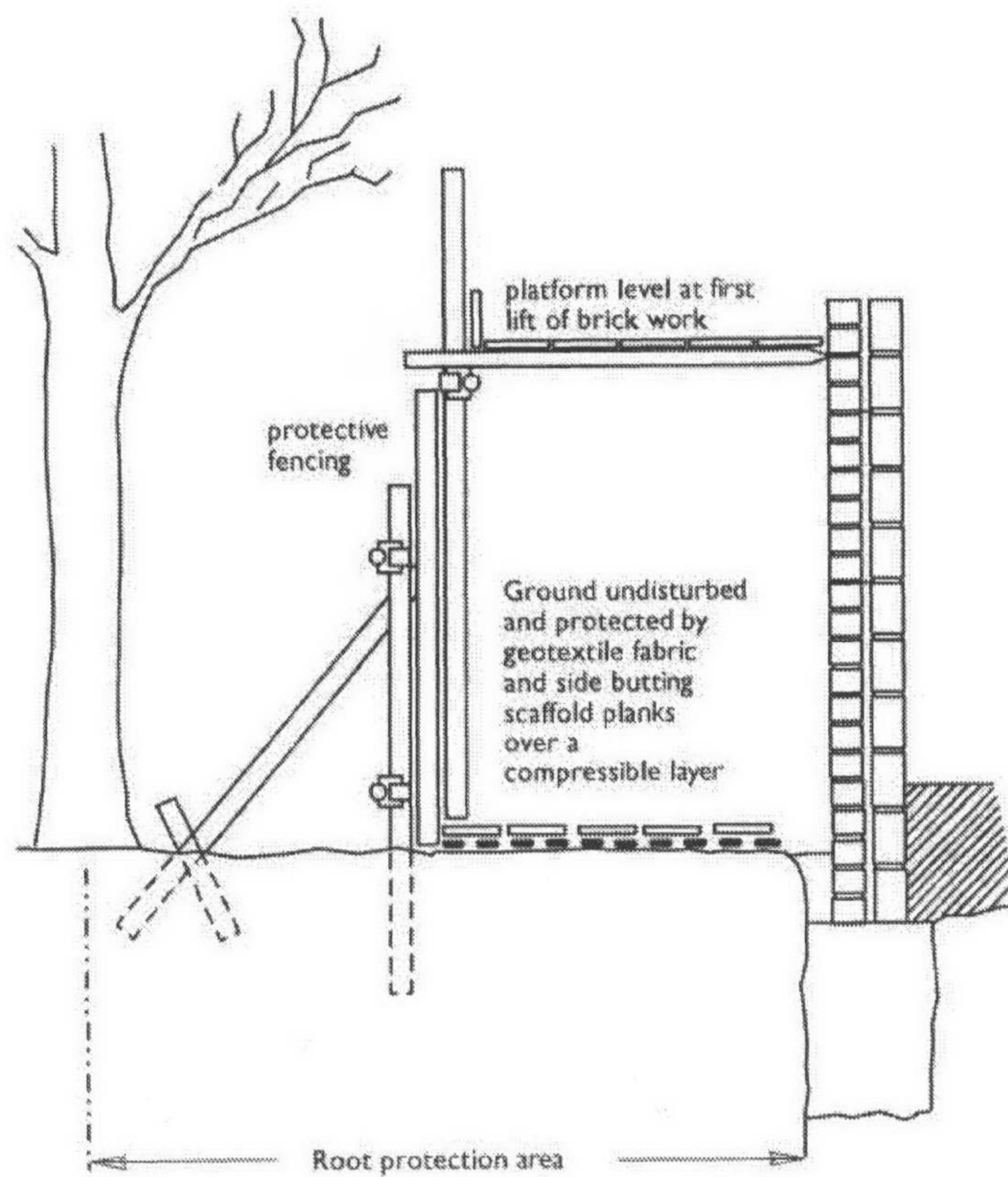


Measures for work within the Root protection area - based on BS5837: 2005 Trees in Relation to Construction

1] Initial stage



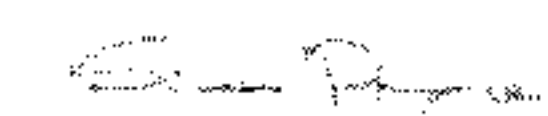
2] With scaffolding





Site: Land at rear of Prime House, Finchley Road, London, NW3  
 Inspection date: 22 November 2007 by Simon Pryce

Tree no.	Species	Age / vigour	Ht. m	Spread				Dia. mm	RPA rad m	Crwn ht. m	Comments and recommendations	Cat
				N	S	E	W					
The trees are numbered as per the previous survey and shown on the site survey drawing. With multiple trunked trees the diameter at the base is in brackets, in some cases these were estimated.												
17	Norway maple <i>Acer platanoides</i>	MA/N	14	6	5	5	5	320 220 (380D)	3.8	7	Leans heavily to the east and has several crossing and rubbing branches, dead wood in the crown and a number of wounds on the trunk. Capable of some more growth but is in poor condition and has little potential even with major remedial work. • <i>Could be cleaned out and the crossing branches removed.</i>	C I
18	Pink horse chestnut <i>Aesculus x carnea</i>	MA/N	12	2	4	3	5	270	3.2	5	Has numerous scars and some deep wounds on the trunk, some with signs of significant decay. The timber is naturally weak and this increases the risk of failure significantly. Also capable of some more growth but has limited potential. • <i>No work needed at present but its safe life is limited.</i>	C I
19	Sycamore <i>Acer pseudoplatanus</i>	MA/N	15	5	5	4	4	160 250 (400D)	4.0	7	Has two main trunks and a few much smaller ones. Very heavily covered in ivy, which prevented any kind of detailed inspection; the foliage appears healthy, but not particularly vigorous. • <i>Ivy needs to be cleared to aid inspection</i>	C?
20	Sycamore <i>Acer pseudoplatanus</i>	MA/N	17	6.5	5	4	5	450	5.4	5	Very heavy ivy is starting to compete with the tree's own foliage. Has a narrow fork at about 2.5m and the branch structure suggests that it might have been topped or broken in the past but limited access and heavy ivy prevented a close inspection. It is possible that the fork has ingrown bark, and topping cuts often decay, either of which would weaken the tree significantly but it is not possible to check this. At best the tree is C but it could be unsafe. • <i>Ivy needs to be cleared in order to make amore detailed inspection.</i>	C? R?
21	Cherry plum <i>Prunus cerasifera</i>	M/N	6	3	2	1	5	50 - 150	2.0	3	Collection of sucker shoots growing out of dense ivy. Reasonably healthy looking but have little amenity value in their own right or as screening. • <i>No work needed at present.</i>	C I



Simon Pryce, B.Sc., F.Arbor.A, C.Biol, M.I.Biol, MICFor, Arboricultural Association Registered Consultant

**Site:** Land at rear of Prime House, Finchley Road, London, NW3  
**Inspection date:** 22 November 2007 by Simon Pryce

### Notes

Observations are made from ground level unless stated otherwise.

Trunk diameters are measured in millimetres at 1.5m above ground or at the narrowest point between the root buttresses and branch flare in bushy trees.

Multiple stemmed trees are indicated with diameters listed separately or as an average denoted by av.

Crown spreads are taken from the trunk centre to the end of the longest live branches in the directions indicated [usually the four cardinal compass points]

Crown height is the clearance under the lowest significant branches.

Protection zones [P.Z.] for multiple trunked trees are normally calculated using the diameter of a single trunk that would have the same cross sectional area.

Tree ages are estimated as below, based on the normal life expectancy of a tree of the species concerned on the site:

Immature.	[IM]	Newly planted or self-set tree.
Young	[Y]	Young tree that is established but has not yet attained the size or form of a fully developed example of its type.
Middle aged	[MA]	Between one third and two thirds of its estimated lifespan.
Mature	[M]	Over two thirds of it's estimated life span.
Over mature	[OM]	Declining and/or approaching the end of it's natural lifespan.
Dying/Dead	[D]	Dead/dying or so badly decayed that it should be removed without delay if a potential threat.

Vigour is assessed on the basis of what is normal for that the species concerned as:

High	[H]
Normal	[N]
Low	[L]
Dead / dying	[D]

Condition is an overall assessment of the tree's health, vigour and life expectancy. Intermediate grades are used where appropriate.

Good	[G]
Fair	[F]
Poor	[P]
Dead	[D]



Site: Land at rear of Prime House, Finchley Road, London, NW3  
 Inspection date: 22 November 2007 by Simon Pryce

**Tree categories – based on BS5837: 2005, Trees in relation to Construction - Recommendations**

Trees for removal				
Category and definition				Identification on plan
Category R				Dark Red
Tree so poor that any existing value would be lost within 10 years and which should, in the current context, be removed as sound arboricultural management	<ul style="list-style-type: none"><li>• Trees that have a serious, irremediable structural defect and are likely to collapse in the foreseeable future, including any that would become unviable after the removal of other R category trees.</li><li>• Trees that are dead or showing signs of significant immediate and irreversible decline.</li><li>• Trees infected with pathogens significant to the health and/or safety of other trees nearby, or low quality trees suppressing better ones nearby.</li></ul> NOTE: Habitat reinstatement might be appropriate, e.g. bat boxes in other trees nearby.			
Trees for retention				
Category and definition	Criteria – sub categories			Identification on plan
	1 – mainly arboricultural values	2 – mainly landscape values	3 – mainly cultural / conservation values	
Category A				
Trees of high quality and value, capable of making a positive contribution for at least 40 years	Particularly good examples of their species, especially if rare or unusual. Essential components of groups or arboricultural features, whether formal or semi formal.	Trees that provide a definite screening or softening effect to the locality in relation to views in or out of the site or those of particular visual importance	Trees, groups or woodlands of significant historical, commemorative or conservation value.	Light green
Category B				
Trees of moderate quality and value, capable of making a significant contribution for at least 20 years.	Trees that might be A category but are downgraded due to impaired condition such as remediable defects including poor past management and minor storm damage.	Trees present in such numbers or in groups or woodlands such that they form distinct landscape features, attracting a higher rating than they might as individuals, e.g. moderate quality trees in avenues with other A category trees, or trees that make little contribution to the wider area outside the site.	Trees with clearly identifiable conservation or other cultural benefits.	Mid blue
Category C				
Trees of low quality and value, currently in adequate condition to remain until new planting could be established [useful life of at least 10 years] Trees under 150mm diameter	Trees not qualifying in higher categories	Trees in groups or woodlands but without this giving them significantly greater landscape value and/or trees offering temporary screening.	Trees with limited conservation or other cultural benefit.	Grey
	NOTE: While C category trees will not usually be retained where they would impose a significant constraint on development young trees with a stem diameter of less than 150mm diameter should be considered for relocation.			

**Site:** Land at rear of Prime House, Finchley Road, London, NW3  
**Inspection date:** 22 November 2007 by Simon Pryce

**Root protection areas [RPAs] – BS5837:2005**

These are normally set out and enclosed by protective fencing, generally sectional welded mesh panels anchored firmly to scaffolding or similar supports.

This is calculated as below:

**Single trunked trees**

An area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m

**Multiple trunked trees [from below 1.5m]**

An area equivalent to a circle with a radius 10 times the diameter of the trunk just above the root flare

This is capped at 707m<sup>2</sup>, which is equivalent to a circle with a radius of 15m or square with sides of about 26m [equivalent to a tree with a diameter of 1250mm].

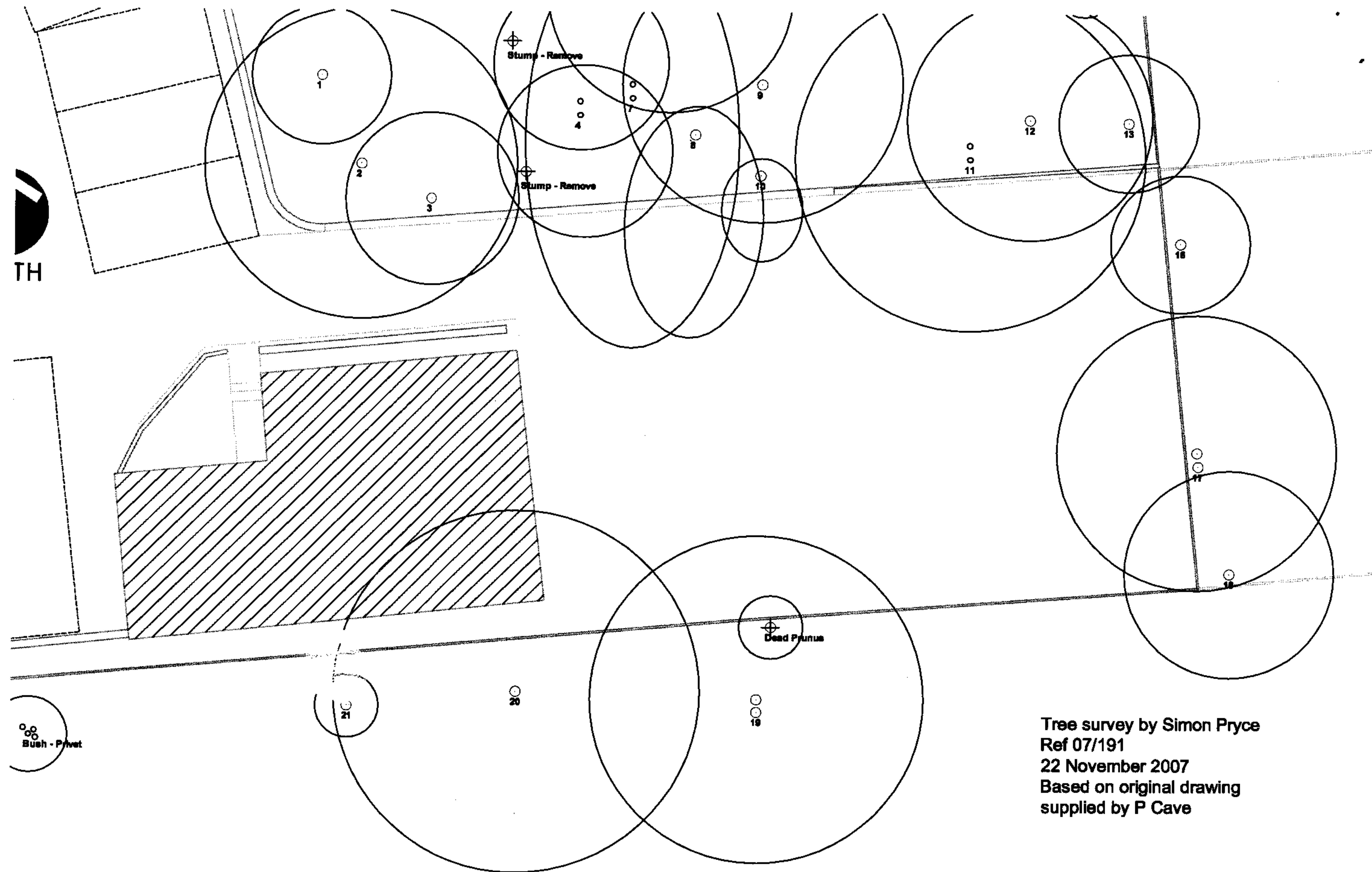
This is to be assessed by an arboriculturalist taking into account the following factors. It may change its shape but not the overall area, whilst still providing adequate protection to the root system.

- The likely tolerance of the tree to root disturbance based on factors such as species, age and condition and the presence of other trees. [For individual open grown trees it may be acceptable to offset the distance up to 20% in one direction]
- The shape and disposition of the root system when known to be influenced by past or existing site conditions, such as the presence of roads, structures and underground services
- The soil type and structure
- Topography and drainage.

[The previous version of the Standard contained a table giving distances between the tree and the fencing based on the size, age and vigour of the tree. Alternatively, if arboricultural advice was not available, fencing was to be erected under the edge of the crown or at a radius equal to half the height]



TH



Tree survey by Simon Pryce  
Ref 07/191  
22 November 2007  
Based on original drawing  
supplied by P Cave