Simon Pryce Arboriculture

Arboricultural Method Statement and Tree Protection Plan

Client: **Mr Carlo Pirri**

Site: **14 Oakeshott Avenue, London, N6 6NS**

Inspection date: **13 June 2023**

Document date: **4 July 2023**

Reference: **23/034**

Author: **Simon Pryce, BSc, FArborA, RCArborA, CBiol, FICFor**

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1 Introduction

1.1 This report has been prepared for Mr Carlo Pirri in connection with building work at 14 Oakeshott Avenue, London, N6 6EP.

1.2 I have been asked to inspect trees growing on and near the site and to prepare a report impact assessment, method statement and tree protection plan, as set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction.

1.3 I have also been asked to identify trees within 10m of the proposed extension in order to inform the engineer's design for the foundations.

Survey method

1.4 This report is based on a site visit and inspection of the trees on 13 June 2023. The inspections were visual and made from ground level within the site or the road in front. Some trees are in adjacent gardens, but could be inspected in sufficient detail for the purposes of this report.

1.5 Their maturity, health and structural condition were assessed and each was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual descriptions and other relevant information are contained in the attached schedule and they are shown on the attached plans, based on the original supplied by Emily Greeves.

1.6 I have also prepared a separate schedule of the trees in the back gardens including their National House Building Council (NHBC) water demand category and the predicted mature height used in the foundation depth calculation.

1.7 The existing plan shows the current site layout. The plan of the proposed layout shows tree protection measures and is the tree protection plan (TPP) specified by BS5837.

Other information

1.8 Camden Council's website shows that the house is in Holly Lodge Estate Conservation Area. The site has no site - specific information about tree preservation orders, so an enquiry would need to be made.

2 Background

The site

2.1 Number 14 is on the south side of Oakeshott Road and is a two storey house that appears to date from the early 20th Century and has been modernised and maintained and maintained to a high standard. The house is near the front of the plot which is about 9.5m wide by 42m long and has a moderate slope down from the front to the rear with the natural lie of the land. The verge to the front is about 4m wide and has a steep slope up to the road, with steps providing access.

2.2 At the rear left of the house is a modern conservatory, so the right of it is a timber deck, with steps down into the garden.

Proposal

2.3 This is shown on the drawings produced by Emily Greeves Architects and consists of various works in the house, including adding a dormer. However the only element that affects trees is the removal of the timber deck and conservatory at the back of the house in order to construct a new extension 4m deep across part of the rear elevation. The footprint of this is shown on the tree plans.

3 Trees

3.1 There are assorted trees near the house, mainly small and medium sized specimens, the most significant being an ash leaf maple growing on the verge in front, a mature flowering cherry and Norway maple in the back garden and a birch and magnolia in the back garden of no.16 to the left. In the back garden of no.12, to the right, is an old pear tree that is in an advanced state of decline.

4 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 are opportunist and grow wherever conditions are favourable i.e. there is a suitable supply of air and water. Many are in about the top metre of the soil, but they can and do grow much deeper if conditions are favourable. The small water absorbing roots die each winter, then new ones develop in spring and grow according to the tree's needs. This allows trees to recover from damage to the fine network of small roots, possibly with some short term reduction in vitality. However damage to larger roots close to the trunk can lead to instability, either immediately or in the longer term, if the wounds are colonised by decay fungi.

Root protection

4.2 Construction near trees can damage roots directly, by excavation, and indirectly by soil compaction due to heavy machinery and contamination from things like diesel oil and cement. BS5837 recommends measures to avoid or minimise this, the main one being that root protection areas (RPAs) are established round retained trees and fenced to exclude access. No ground work should take place within these without suitable safeguards, such as protecting soft ground against compaction or contamination.

4.3 The starting point is that a single trunked tree's RPA has an area equivalent to a circle with a radius 12 times the trunk diameter measured at 1.5m above ground. The 12x figure is not based on research, but it has proven effective in most cases. In fact most root systems spread well beyond that and significantly deeper than 1m.

4.4 Under open ground roots spread more or less uniformly from the tree, but they are affected by obstructions and variations in growing conditions, so depth and spread are far less predictable near roads and buildings. RPA shapes should be adjusted from the original circle where there is evidence that root spread and/or depth are uneven. That can also compensate for work within the original circle. However this must be based on a sound arboricultural assessment of the extent and shape of the root system and equivalent rooting space should be allowed in other directions.

5 Discussion

Direct implications

5.1 The RPAs have been shown as circles in order to illustrate the areas concerned and most of these trees have few obvious obstructions to root spread, so the circles will be reasonably accurate indications of actual root spread. The RPAs are nearly all well clear of the house and new extension except for tree 6, the evergreen magnolia in the back garden. The corner of the extension takes up about 3.8m^2 of the circle, or about 12%. That is not a particularly high proportion of the root system, but it involves ground work about 1.1m from the trunk, which could damage major roots.

5.2 The magnolia is declining, probably as a result of the dry summer last year, and is not a good species to have growing this close to a building, particularly with dark evergreen foliage, so the best option is to remove it. That would be noticeable in the immediate vicinity, but the tree is not a prominent individual and the larger, better quality ones nearby would mitigate any visual impact from outside the garden. As it is close to the back of the house it is completely hidden from any public viewpoints and a new tree in a more suitable location would make a better contribution to the gardens.

Indirect implications

5.3 This is a small scale project with no access for heavy plant or vehicles, so the retained trees are not unduly vulnerable to incidental damage during the works. They can be safeguarded with a length of protective fencing across the garden in order to prevent construction access into the RPAs. The exception is tree 7, the wisteria at no.16, where work access will be needed next to the extension. The stone paving there will protect underlying roots from physical damage and covering the path to protect the top surface will catch any dropped mortar or potential contaminants that might get through into the ground.

5.4 Overhanging growth from the wisteria, item 7, is likely to need trimming for work access but wisterias can tolerate severe pruning, so that would not harm it materially and it would regrow rapidly. There is a common law right to cut back overhang and climbers are beyond the scope of the conservation area legislation.

5.5 Tree 10, the declining pear at no.12 is not affected by the proposed work and needs to be removed in any event, so is not relevant to this proposal.

Tree protection

5.6 Protective measures are specified in the next section and illustrated in the plan showing the proposed layout, which is the tree protection plan (TPP) recommended by BS5827:2012.

Foundations

5.7 According to the NHBC Standards Chapter 4.2 most of these trees do not need the foundations to be deepened on their account. The pear, tree 10 would have needed a 1.8m foundation, but is dying, so that no longer applies. Wisterias can develop as much foliage as a medium sized tree, so using a height of 10m in the calculation gives a required depth of 2m. However the small holm oak is a high water demanding tree and if it was retained the NHBC Standard would specify an engineer designed foundation at least 2.5m deep. However these comments are from a purely arboricultural perspective, detailed consideration of the foundations is an engineering matter.

Simon Pryce, BSc, FArborA, RCArborA, CBiol, FICFor

Part 2 - Arboricultural method statement

This document is to be read in conjunction with the survey report and tree protection plan [TPP]. Any queries are to be referred to the arboriculturist.

Preliminaries

1. Before any site work starts the contractor and arboriculturist are to agree all work affecting trees, particularly protective fencing, access routes and storage areas.

Tree work

2. Tree 6, the evergreen magnolia behind the conservatory is to be felled and the stump and main roots removed. The wisteria will need cutting back close to the boundary fence to allow the work on the side of the extension.

3. All tree work should be carried out in accordance with BS3998: 2010, Recommendations for Treework, by an arboricultural contractor with appropriate third party and public liability insurance. The Arboricultural Association has a list of approved contractors, at https://www.trees.org.uk/ARB-Approved-Contractor-Directory .

Fencing

4. A tree protection fence is to be erected across the garden, as shown on the TPP. The side boundary fences, combined with any site safety / security fence, will protect trees in the gardens to each side. If it is more practical or convenient distances from the trees may be increased, but they must not be reduced without the agreement of the arboriculturist.

5. Fencing is to be at least 2m high and sectional welded mesh fencing [e.g. Heras], or plywood, on a scaffolding framework as in figure 1. Diagonal braces are to be anchored to scaffold poles driven into the ground or proprietary weighted base plates.

6. Each run of fence is to have at least one warning sign, as shown in figure 2, or a suitable alternative giving the same information.

Ground protection

7. Where it is necessary to move or work within tree protection areas the options for ground protection are:

- for pedestrian movements only, a single thickness of scaffold boards or 18mm min plywood placed either on top of a driven scaffold frame to form a suspended walkway, or on a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a Terram ® or similar geotextile membrane (fig 3);

- for pedestrian-operated plant up to 2t gross, 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. Alternatively use one of the proprietary systems, as shown on figure 4.

8. No fencing or other tree protection is to be moved or dismantled without the agreement of the arboriculturist.

Work methods

Hard surfaces

9. Any hard surfaces needing to be removed within protected areas are to be broken out and taken up by hand or with hand operated power tools. If powered machinery needs to be used it is to remain on the hard surface and work backwards away from the cleared ground.

Underground services

10. In order to avoid root disturbance new services should connect to existing ones in the house where possible. Otherwise any new installation within RPAs is to follow the guidelines in the National Joint Utilities Group (NJUG) publication and operatives handbook[1].

General

11. No work is to take place within protected areas without the prior agreement of the arboriculturist and without suitable alternative protective measures.

12. No equipment, machinery or structure shall be attached to or supported by any retained tree.

13. Outside fenced and protected areas there are no arboricultural constraints on working methods.

14. Any roots found outside protected areas are unlikely to be significant, but any over 25mm diameter and not obviously from recently felled trees should be covered to prevent them drying out and the arboriculturist notified. Smaller roots can be cut cleanly.

15. Cement and concrete mixing must take place as far as possible from protected areas, over a suitable hard surface to prevent soil contamination from spillage or washing out into rooting zones.

Storage

16. No materials are to be stored within RPAs except on existing impermeable hard surfaces.

17. Potential contaminants such as diesel oil and cement must be stored as far from rooting areas as practical, with provision made for any spillage or run off to be contained away from rooting areas.

Landscaping

18. Tree protection measures are to remain in place until all demolition, construction and hard landscaping are complete.

19. Outside the protected areas there are no arboricultural restrictions on hard landscaping.

20. Within the protected areas only soft landscaping is to take place. No levels are to be changed beyond what is required for planting and any irrigation pipes are to be above ground or dug in by hand.

21. No persistent soil acting herbicides are to be used.

[1] National Joint Utilities Group (NJUG) (2007) Volume 4, Installation and maintenance of utility apparatus in proximity to trees. Guide and operatives' handout

Completion

22. Once site work is complete the trees are to be reinspected and any necessary final pruning or other work is to be carried out.

Supervision timetable

23. Pro forma schedule and inspection report forms are attached.

Timing	Purpose
Pre-start	Check tree protection measures are in place and fit for purpose. Confirm access routes, work and storage areas, and any other queries.
Monthly	Routine check of protection measures and any other matters requiring attention. These can be more frequent if appropriate, e.g. on complex projects.
As required	One off checks as required, for instance if work schedule requires protection layout to be altered or if large roots are encountered unexpectedly. Supervision of potentially damaging operations such as exploratory excavation near trees.
Completion	Final check of tree condition, assess the need for any pruning or other work.

Contact details

Position	Name	Phone	Mobile	e mail
Arboriculturist	Simon Pryce	01923 467600	07710 224906	info@simonpryce.co.uk
Architect	Emily Greeves		07830 342388	mail@emilygreeves.com
Owner	Mr Carlo Pirri			
Main contractor	TBA			
Site manager	TBA			

Figure 1 - Tree protection fence details - after BS5837 2012

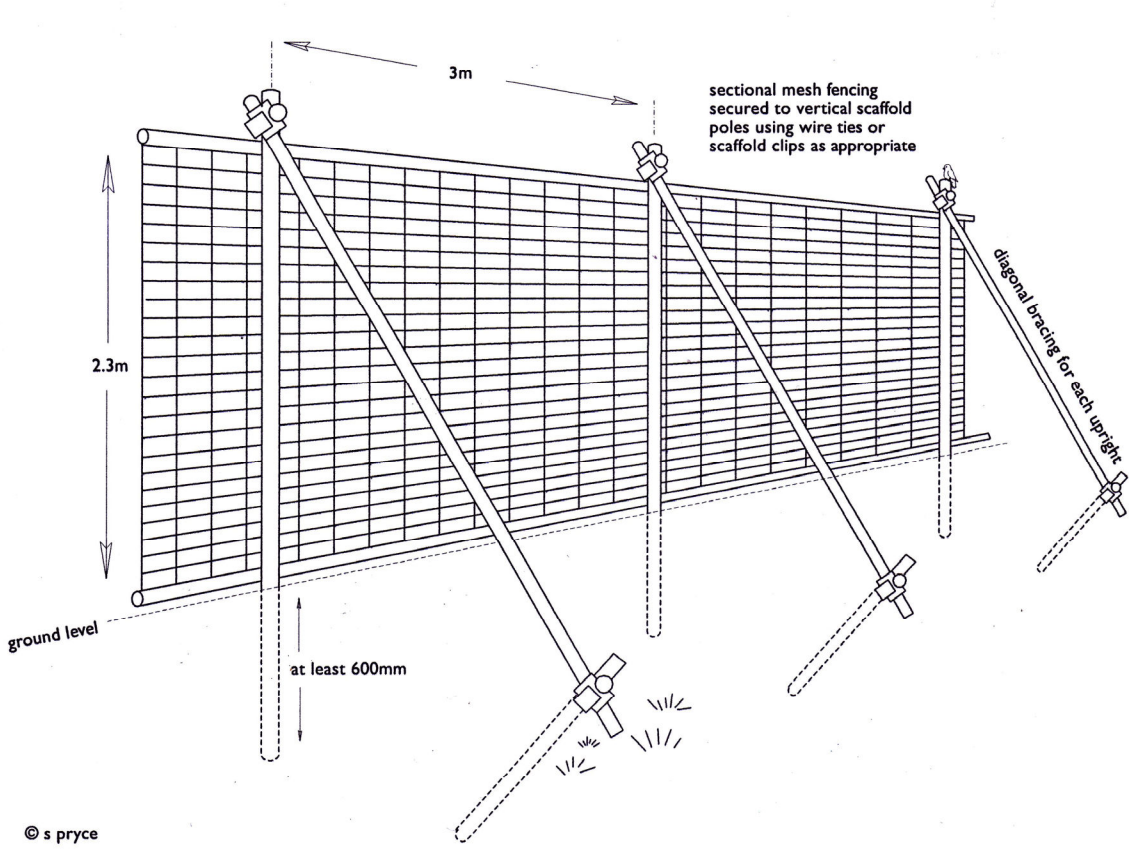

Figure 2 - Warning sign for tree protection fence

Figure 3 - Ground protection within the RPA [based on BS5837:2005]

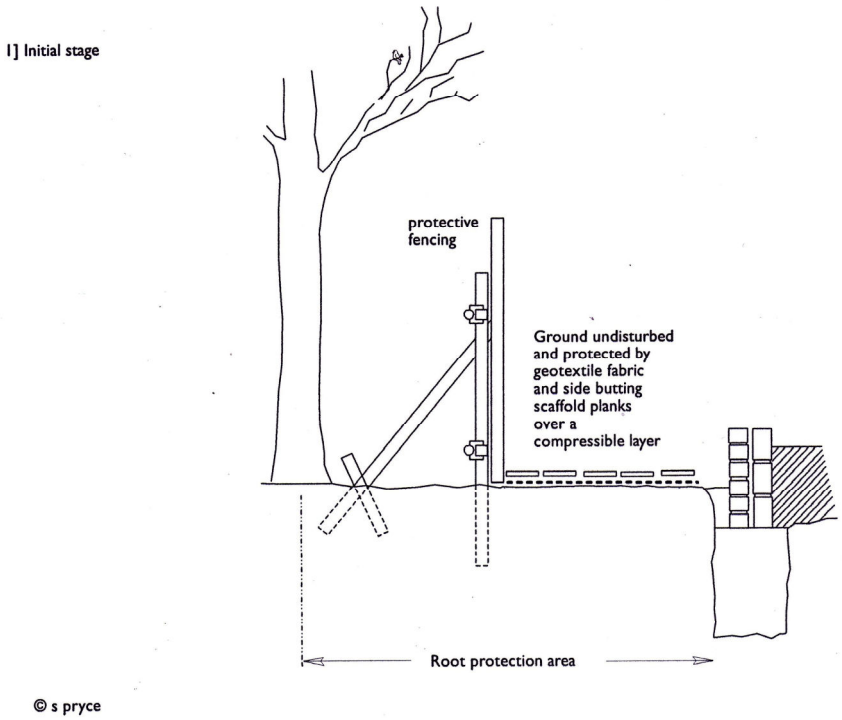

Figure 4 - Proprietary ground protection system

Site monitoring schedule

Site	14 Oakeshott Avenue, N6 6NS	**Ref**	23/034	**Date**	
Client	Mr Carlo Pirri				
Site contact		**Tel**			
Date / phase	**Comments**				
Initial	Check tree protection measures are in place and fit for purpose. Confirm access routes, work and storage areas, address any other queries.				
	Add or delete rows as required				
Completion	Final check of tree condition, assess the need for any pruning or other work.				

Standard schedule - may be modified in the Method Statement

Timing	**Purpose**
Pre-start	Check tree protection measures are in place and fit for purpose. Confirm access routes, work and storage areas, and any other queries.
Monthly	Routine check of protection measures and any other matters requiring attention. These can be more frequent if appropriate, e.g. on complex projects.
As required	One off checks as required, for instance if work schedule requires protection layout to be altered or if large roots are encountered unexpectedly. Supervision of potentially damaging operations such as exploratory excavation near trees.
Completion	Final check of tree condition, assess the need for any pruning or other work.

Site monitoring record

One to be completed for each visit

Site	14 Oakeshott Avenue, N6 6NS	**Ref**	23/034	**Date**	
Inspector					
Observations and comments - incl. previous recommendations					
Recommendations					
Next visit		**Signed**			

Site: **14 Oakeshott Avenue, London, N6 6NS**

Inspection date: **13 June 2023 by Simon Pryce**

Tree no.	Species	Age / vitality	Ht. m	Spread				Dia. mm	RPA rad m	RPA area m^2	Crwn ht. m	Comments and recommendations	Cat
				N	S	E	W						
The trees are described in sequence starting in front of the house and going to the rear, as shown on the site plans. Asterisks denote those in other ownership with house numbers in bracket where applicable. m/s/ = multiple stemmed.													
Front													
1 *	Ash leaf maple	M/N	10	5	6	7	7	300	3.6	41	3	Has some minor branch damage but is sound and healthy and prominent in the street scene.	**B**
2 *	Amelanchier	Y/N	6	1.5	1.5	2	1.5	10	1.0	2.9	2	Healthy young tree planted in the verge.	C
3 * (16)	Ornamental sycamore	Y/N	5	1.5	1.5	1.5	1	70	0.8	2.2	1.5	Healthy young tree. Ornamental variety *Brilliantissimum*, slow growing, maximum likely height about 7m.	C
4	Japanese maple	MA/N	3.5	4 x 1.2				3 x 50	1.0	3.5	1.5	Healthy young tree that has been trimmed lightly.	C
5	Weeping birch	MA/N	1.2	1	1	0.8	0.8	50	0.6	1.1	0.5	Small shrubby tree that will not get much larger.	C
Rear													
6	Evergreen magnolia	MA/N	7	2	3	1.5	3	100 160 180	3.1	30	3	Lower foliage is in reasonable condition but the upper foliage is sparse and leaves are turning yellow and being shed. This is probably a reaction to the severe drought in 2022, which continued into early 2023. Many other trees are showing similar symptoms this year.	C
7 * (16)	Wisteria	M/N	4	3	3	3	2	m/s	2.5	20	1	Could not be inspected closely but is free standing and appears to have been trained on a frame of some kind. Sound and healthy looking.	C
8 * (16)	Birch	M/N	6	4 x 5				300	3.6	41	3	Has been pruned and trimmed to form a parasol. Sound and healthy looking.	**B**
9 * (16)	Magnolia	M/N	9	7	6	5	4	250 + 200	3.8	46	3	Close inspection not possible but sound and healthy looking.	**B**
10 * (12)	Pear	D	8	3	3	3	3.5	300	-	-	3	Leans slightly and has very sparse foliage indicating advanced decline.	**U**
11	Cherry	M/N	9	6	5	4	5	m/s 110 - 240	5.1	83	3	Has multiple trunks from the base possibly due to being topped or damaged when young. Has been reduced and shaped in the past and regrowth is trimmed regularly.	C
12	Norway maple	MA/N	8	4	4	3	4	180	2.2	15	3	Ornamental form with purple foliage. Healthy but planted close to a concrete path and the roots are lifting it. Capable of growing much larger if left.	C

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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 multiple trunked trees; in such cases this is indicated by [c].
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.

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.
Veteran	[V]	Old tree with characteristic features including hollow trunk, old wounds etc. that give high landscape, ecological and cultural value.
Ancient	[A]	Exceptionally old tree, typically has short, wide hollow trunk and low squat shape due to the crown retrenching over many years.
Dying/Dead	[D]	Dead/dying or so badly decayed that it should be removed without delay if a potential threat.

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

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

Root protection areas [RPAs] - BS5837:2012

For single trunked trees these are calculated as an area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m. For multiple trunked trees it is based on the diameter of a single trunk that would have the same cross sectional area at 1.5m.

Any deviation from a circular plot should take into account the following factors whilst still providing adequate protection for the roots.

- 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.
- Topography and drainage.
- The soil type and structure.
- The likely tolerance of the tree to root disturbance based on factors such as species, age and past management.

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Tree categories – based on BS5837: 2012, Trees in relation to design, demolition and construction - Recommendations

Trees for removal				
Category and definition				**Colour code**
Category U				**Red**
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 in the foreseeable future, including any that will become unviable after the removal of other U category trees. (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning.) • Trees that are dead or showing signs of significant immediate and irreversible decline. • Trees infected with pathogens significant to the health and/or safety of other trees nearby, or very low quality trees suppressing better ones nearby. *NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.*			
Trees for retention				
Category and definition	**Criteria – sub categories**			**Colour code**
	1 – mainly arboricultural values	**2 – mainly landscape values**	**3 – mainly cultural / conservation values**	
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 historical, commemorative or conservation value. (e.g. veteran trees or wood -pasture)	**Green**
Category B				
Trees of moderate quality with an estimated remaining life expectancy 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 benefits.	**Blue**
Category C				
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural benefit.	**Grey**

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Trees to the rear - assessment for foundation design as per NHBC Standards Chapter 4.2

Tree no	Species	Distance	NHBC category	NHBC mature height	Comments
6	Evergreen magnolia	removed	Low	9m	The evergreen species grows larger than most others, I would suggest using 15m to give a safety margin
7 * (16)	Wisteria	2.2m	Medium *	-	Related to laburnum (low, 12m), honey locust (low, 14m) and false acacia (med, 18m) Climbing plant but can develop as much foliage as a medium sized tree. Using 10m should give a good margin.
8 * (16)	Birch	8.3m	Low	14m	Healthy, well away from the proposed extension.
9 * (16)	Magnolia	8.8m	Low	9m	Healthy, also well away from the proposed extension.
10 * (12)	Pear	3.9m	Medium	12m	Dying, so no longer a subsidence risk
11	Cherry	8.1m	Medium	9m	Reasonably healthy, well away from the house
12	Norway maple	18m	Medium	18m	Capable of growing much larger. Some distance from the house, stands pruning well, but not ideal for this location.
	Holm oak	4.9m	High	16m	Currently small and young but one of the closer trees to the extension, and would require much deeper foundations.

Distances are measured on the plan, so should be confirmed.

NHBC mature heights are from Table 3 in the NHBC Standard and should be used even when actual heights are greater.