Simon Pryce Arboriculture

Arboricultural Impact Assessment and Method Statement

Client: **Hayhurst & Co, Architects**

Site: **99 Frognal, Hampstead, London, NW3 6XR**

Date: **1 November 2023**

Reference: **21/109 AMS**

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

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1 Introduction

1.1 This report has been prepared on the instructions of Hayhurst & Co, Architects in connection with building work at 99 Frognal, Hampstead, London, NW3 6XR.

1.2 Camden Council's pre-application advice of 20th January 2023 contains the following comments:

Upon consultation with the tree officer the proposal might potentially be acceptable from an arboricultural perspective. A successful application would be accompanied by an arboricultural report in line with the British Standard BS5837:2012 trees in relation to design, demolition and construction: recommendations, including an arboricultural impact assessment, arboricultural method statement and tree protection plan. Details of landscaping including replacement planting to mitigate any trees to be removed with details of tree pits and maintenance schedules.

1.3 Landscaping and replacement planting are being addressed by others. This document is the arboricultural impact assessment and method statement and follows on from my preliminary survey and report reference 21/109, based on a site visit and tree survey on 25 February 2022. Comments and recommendations in the previous report still apply unless contradicted in this one, which also follows the guidelines set out in British Standard 5837: 2012, Trees in relation to design, demolition and construction.

1.4 Tree protection measures are specified in detail in Part 2 of this document and illustrated on the plan showing the proposed layout, which serves as the tree protection plan (TPP) specified by BS5837.

2 Arboricultural implications

Background

2.1 The site and trees are described in my preliminary report of 25 February 2022, a copy of which is appended for reference. Since then two of the worst quality trees have been removed. These were no.19, a willow with severe structural decay and tree 33, a cherry that was dying. Most of the significant specimens are on the far side of the drive to the south and round the rear lawn to the west of the house, well away from the proposed work areas.

Proposal

2.2 This is shown on the plans produced by Hayhurst & Co and involves modifications to the house, demolition of the modern L shaped annexe, construction of a northern extension, and three small residential units to the north and east of the site.

Tree removals

2.3 The proposed layout retains all the A and B category trees. Of the 35 trees in the survey a total of eight have been removed or are removed as detailed in the tables below. Five of those were / are U category, so would need to be removed irrespective of this proposal. Trees 19 and 33 have already been removed under the conservation area procedures, Camden ref 2022/5443/T, and a further section 211 notice is being submitted for tree 34, a dying cherry.

2.4 Of the three retained trees no.17 is a shrub too small to qualify for conservation area protection, 32 is Norway spruce and 35 a plum, neither of them significant specimens.

Removed due to poor condition

No	Species	Cat	Comments
15	Cherry	U	Poor quality specimen with no potential.
19	Willow	U	Severe decay, removed already, ref 2022/5443/T
21	Cherry	U	Poor specimen with no potential.
33	Cherry	U	Was dying, removed already, ref 2022/5443/T
34	Cherry	U	To be removed with Section 211 notice.

Removed in connection with the proposal

No	Species	Cat	Comments
17	Lilac	C	Small shrub tied back to railings.
32	Norway spruce	C	Insignificant specimen, too close to footprint to be retained.
35	Plum	C	Under the building footprint, not a significant specimen.

2.5 Removing these three trees will have little visual impact within the site and virtually none from the road or adjacent sites. With the new layout direct replacement of removed trees in the same places would not be feasible. However the landscaping scheme, being drawn up by others, is to include new tree planting that will make a better long term contribution to the site and the character and amenity of the conservation area. Possible locations for new trees are shown on the tree protection plan.

2.6 Tree 7, a beech on the south side of the drive is U category because it is rooted next to the boundary wall and will damage it if left to grow on. That is not urgent, neither does it affect this proposal.

Tree protection

2.7 The retained trees are in well defined groups. Roots of trees 1- 14 on the south side of the drive are contained by the retaining wall and the existing drive surface will protect any roots beneath. The lower branches are well above the height at which they might be affected by high vehicles.

2.8 All the significant trees retained in the garden are well clear of the work area and access routes and can be safeguarded during the work with a straightforward fence layout, which also allows some space for facilities and storage on the lawn and in the lower courtyard.

2.9 These measures are illustrated in the plan showing the proposed layout, which is the tree protection plan (TPP) recommended by BS5827:2012 and detailed in the method statement below.

Simon Pryce

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 demolition or building starts the contractor and arboriculturist are to agree all work affecting trees, particularly protective fencing, access routes and storage areas.

2. Any preliminary exploratory excavation within RPAs is to be done by hand or using an air spade. See also clause 14 below.

Tree work

3. Trees 19 and 33 have already been removed and a six week notice has been served to remove tree 34. The remaining trees in the table on page 3, i.e. numbers 15, 17, 18, 21, 32, and 35 are to be felled and stumps and main root removed.

4. All tree work must 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

5. Protective fencing is to be erected so as to provide continuous barriers round the trees to be retained, as shown on the TPP. 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.

6. 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.

7. 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.

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 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 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].

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

General

11. No work is to take place within fenced 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. Replacement soil is to comply with; BS3882:2015 - *Specification for topsoil*, for the upper 300mm to 400mm, with replacement subsoil below that to comply with BS 8601:2013 - *Specification for subsoil and requirements for use*, and to include a 200mm drainage layer.

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

Completion

23. 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

24. Pro forma schedule and inspection report forms are attached below.

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 / web
Arboriculturist	Simon Pryce	01923 467600	07710 224906	info@simonpryce.co.uk
Architect	Hayhurst & Co	020 7247 7028		www.hayhurstand.co.uk
Owner				
Main contractor	TBA			
Site manager	TBA			

Figure 1 - Tree protection fence details - after BS5837 2012

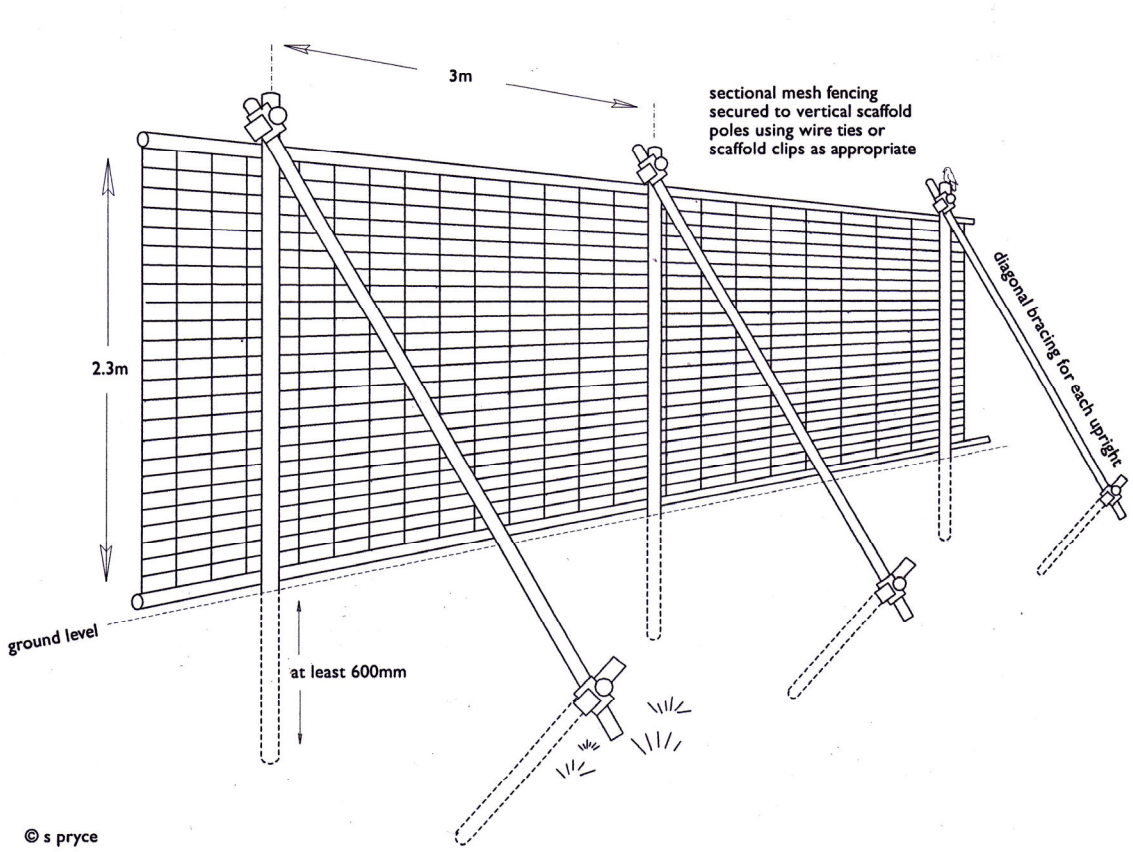

Figure 2 - Warning sign for tree protection fence

Site monitoring schedule

Site	99 Frognal	**Ref**	21/109	**Date**	
Client					
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	99 Frognal	**Ref**	21/109	**Date**	
Inspector					
Observations and comments - incl. previous recommendations					
Recommendations					
Next visit		**Signed**			

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce, updated 31 October 2023**

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 as shown on the plan, starting near the entrance, going along the left hand side of the drive to the gates to 99a, then from the entrance going clockwise round the grounds of no.99.													
Trees left of the drive to no.99a													
1	Holly	MA/N	6	2	3	3	2	200 2x80	2.8	24	5	Some ivy on the trunk, has been cut back to clear the drive.	C
2	Yew	Y/N	7	2	4	3	3	180 120	3.4	37	4	Healthy young tree, also cut back on the drive side	C
3	Norway maple	M/N	22	7	5	4	7	800	9.6	290	9	Growing on the boundary, ownership unclear and the diameter had to be estimated. Has been crown reduced about two years ago and is growing back vigorously.	C
4	Yew	MA/N	6	3	2	2	2.5	140	1.7	9.3	1	Healthy young tree, growing under the horse chestnut but is shade tolerant and not being suppressed.	C
5	Horse chestnut	M/N	11	5	5	6	5	890	10.7	359	5	Has been crown reduced and is repollarded regularly, the last time about one year ago to judge from the regrowth, which is healthy looking.	C
6	Holly	MA/N	6	3	2	2	1.5	120	1.4	6.5	1	Growing back from a cut stump, under the other trees but not unduly suppressed.	C
7	Beech	MA/N	20	7	7	6	6	510	6.1	117	4	Rooted next to the building wall. It does not appear to have damaged the building so far, but the lower trunk and root system are distorted and it leans heavily over the drive and it will cause significant problems if retained.	U
8	Birch	M/N	18	4	0	3	6	350	4.2	56	5	Leans heavily due to growing near the beech, otherwise sound and healthy looking.	C
9	Holly	MA/N	10	4	5	4	5	210	2.5	19	2	Foliage slightly sparse, otherwise good.	C
10	Holly	MA/L	14	1	2	4	1	220	2.7	23	2	Possible offspring of 27. Slightly sparse, otherwise fair.	C
11	Sitka spruce	MA/N	10	1.5	1.5	2	1.5	160	1.9	12	2	One sided due to being shaded by other trees.	C
12	Birch	MA/L	14	1	2	4	1	240	2.9	26	5	Leans and suppressed by the other trees	C
13	Holly	MA/L	13	2.5	2	3	2	210	2.5	19	5	Sparse and drawn up due to growing near the other trees.	C
14	Birch	MA/N	20	5	6	5	7	430	5.2	83	8	Large healthy dominant tree	B
Grounds of no.99													
15	Flowering cherry	MA/L	7	2.5	2	2	2.5	190	2.3	16	3	Poor specimen, reduced severely and has some shoots growing from the stump. Still has some dead leaves killed by leaf scorch last summer, which is not particularly harmful in itself, but the tree is declining.	U
16	Magnolia	MA/N	7	4	4	5	4	2x 160	2.7	23	1.5	Some branches are crossing and rubbing but it is a healthy specimen.	B
17	Lilac	MA/N	5	2	2	1.5	1.5	2x 60	1.0	3.3	1	Small specimen tied back to the railings.	C

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce, updated 31 October 2023**

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						
18	Magnolia	MA/N	8	5	4	3	3	180	2.2	15	2	Healthy specimen.	C
19	Goat willow											Severely decayed, felled for safety.	U
20	Holly	MA/N	6	1.5	2	1.5	2	130	1.6	7.6	1	Has been cut back to clear the drive, poor specimen but provides some screening.	C
21	Winter cherry	Y/L	7	4 x 1.5				120	1.4	6.5	1	Poor specimen, cut back badly.	U
22	Holly	Y/N	5	1	1.5	2	1.5	80	1.0	2.9	1	Pair of trees growing in the hedge in front of the building, possibly self seeded or planted for screening. Have been cut back for clearance, slightly sparse but healthy.	C
23	Holly	Y/N	7	1	1.5	1.5	1.5	80	1.0	2.9	1		C
24	Wild cherry	M/N	14	7	6	5	6	380	4.6	66	5	Branch end over the building have been cut back. Has some leaf scorch from last season, but that is not particularly serious and is sound and healthy otherwise	B
25	Japanese maple	M/N	7	6	3	4	5	260	3.1	31	1	One sided due to growing near the cherry but is a sound, healthy specimen and one of the better trees.	B
26	Persian ironwood	MA/N	7	3	3	3	3	270	3.2	34	2	Growing among the shrubs next to the drive. Topped at about 4m and growing back vigorously.	C
27	Sitka spruce	M/N	24	4	4	4	2	430	5.2	83	5	Common forestry tree, not often found in gardens. Healthy specimen, growing well.	A
28	Yew	MA/N	12	4	3	4	3	240	2.9	26	2	One sided due to growing near the other trees, sound and healthy otherwise.	C
29	Holly	M/N	15	3	4	4	5	210 160 180	3.8	44	4	Slightly drawn up due to growing near others but sound and healthy.	B
30	Hornbeam	M/N	19	7	8	7	7	480	5.7	103	4	Rooted on a bank and leans down the slope but is sound, healthy and well rooted.	B
31	Yew	MA/N	8	3	3	4	3	180	2.2	15	2.5	Under the hornbeam, with several other smaller yews. Shad tolerant species, not being suppressed.	C
32	Norway spruce	M/N	11	3	3	3	3	270	3.2	33	3	Growing in a planting bed near the top of a retaining wall. Lower branches have been removed and there some minor die back above the building, otherwise fair.	C
33	Cherry	D										Was dying and has been removed.	U
34	Cherry	M/L	12	2	2	3	2	250 180 240	47	69	5	Badly topped in the past, creating large wounds. Regrowth has been poor and there are scorched leaves from last season. Beyond any remedial work.	U

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce, updated 31 October 2023**

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						
35	Plum	M/N	5	3	2	3	3	180 160	2.8	25	2	Has a narrow fork between the two trunks but that is reasonably well formed. Has been pruned regularly and is sound and healthy.	C

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Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce, updated 31 October 2023**

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.

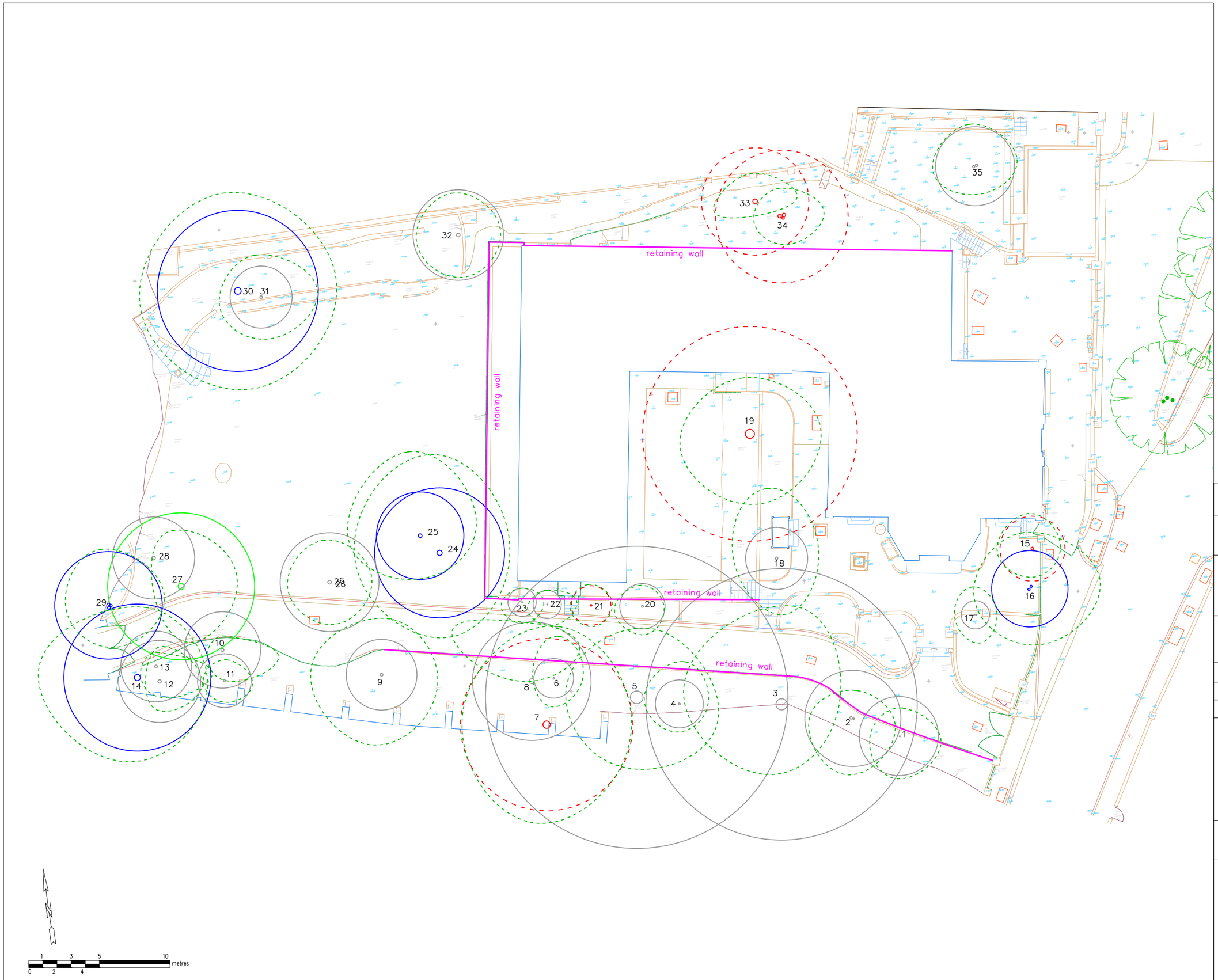
- The shape and disposition of the root system when known to be influenced by past or existing site conditions, such as the presence of roads, structures and underground services.
- Topography and drainage.
- The soil type and structure.
- The likely tolerance of the tree to root disturbance based on factors such as species, age and past management.

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce, updated 31 October 2023**

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**



Simon Pryce Arboriculture

Client:
Hayhurst & Co

Site:
99 Frognal, Hampstead, London, NW3 6XR

Title:
Tree survey and constraints plan

Date: 16 February 2022

Ref: 21/109 | Rev:

Scale: 1:250 at A3

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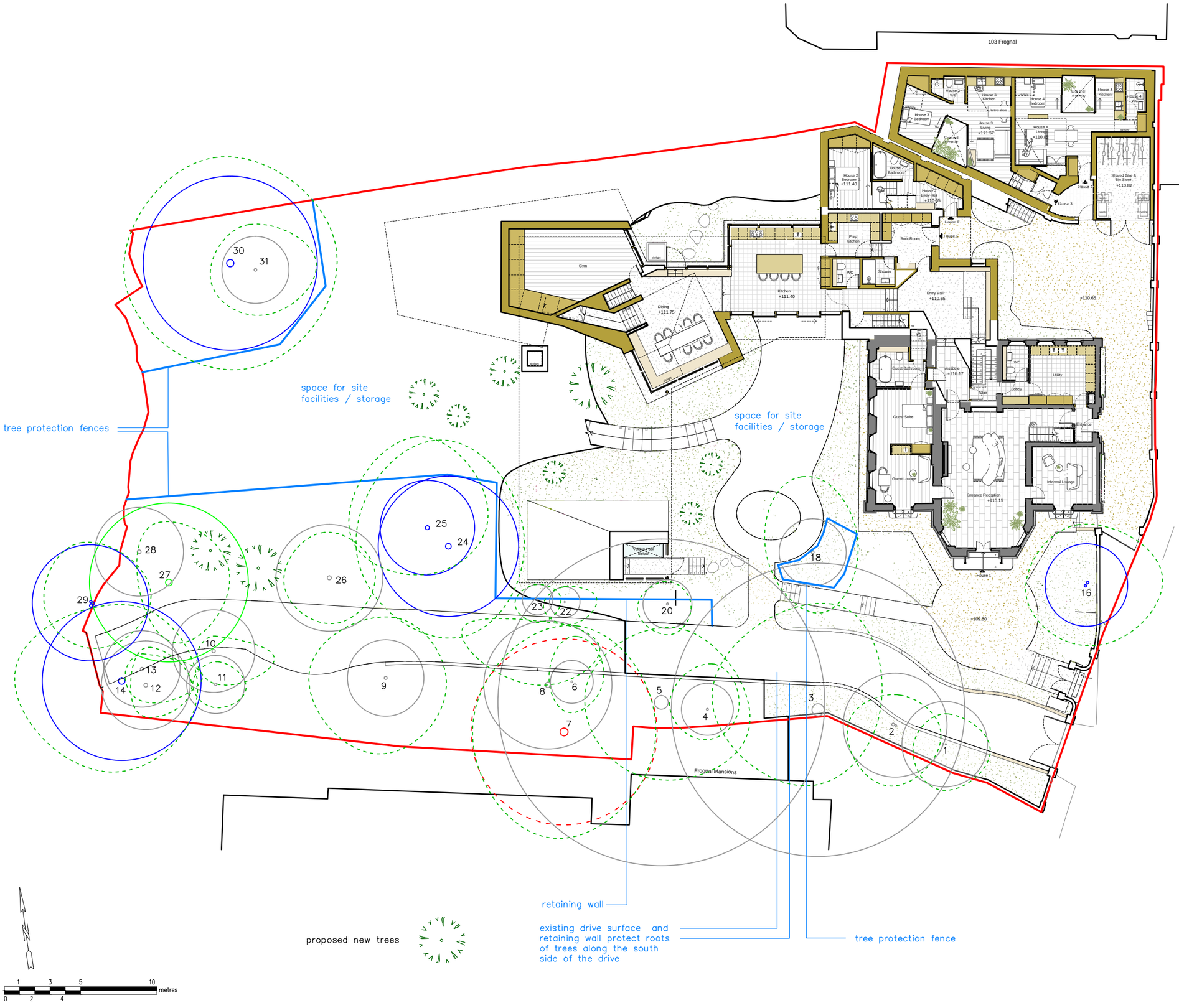
Original drawing:
Topo survey from Hayhurst & Co

Root protection areas [RPAs] are colour coded according to retention category from BS5837:2012, Trees in relation to design, demolition and construction:

A = green
B = blue
C = grey
U = red - dashed - also used to denote dead trees with no RPA
Tree protection = mid blue
Crown spreads = mid green



Simon Pryce Arboriculture

Client:
Hayhurst & Co

Site:
99 Frognal, Hampstead, London, NW3 6XR

Title:
Proposed layout and Tree Protection Plan (TPP)

Date: 2 December 2023

Ref: 21/109 Rev:

Scale: 1:250 at A3

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Original drawing:
Hayhurst & Co

Root protection areas [RPAs] are colour coded according to retention category from BS5837:2012, Trees in relation to design, demolition and construction:

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U = red - dashed - also used to denote dead trees with no RPA
Tree protection = mid blue
Crown spreads = mid green

Simon Pryce Arboriculture

Report

Client:	**Hayhurst & Co**
Site:	**99 Frognal, Hampstead, London, NW3 6XR**
Subject:	**Tree survey and constraints plan**
Inspection date:	**16 February 2022**
Report date:	**25 February 2022**
Reference:	**21/109**
Author:	**Simon Pryce, BSc, FArborA, RCArborA, CBiol, MICFor**

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AA Registered CONSULTANT trees.org.uk

1 Introduction

1.1 This report has been prepared for Hayhurst & Co Architects in connection with building work at 99 Frognal, London NW3 6XR.

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

Survey method

1.3 This report is based on a site visit and inspection of the trees on 16 February 2022. The inspections were visual and made from ground level within the site or from public areas.

1.4 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 plan, based on a topographic survey provided by Hayhurst & Co.

1.5 The attached plan shows the existing site and trees and is the arboricultural constraints plan specified by BS5837.

Other information

1.6 This includes:

1. The map and tree schedule from the County of London (Hampstead no.11) tree preservation order 1957, provided by Hayhurst & Co.
2. Documents from two Section 211 conservation area notices of intent to carry out various tree works in 2016 and 2018. Some provided and others downloaded from Camden's web site.

2 The site

2.1 Number 99 is on the west side of Frognal and is a large detached house that appears to be at least 100 years old and was formerly a convent. It faces south and has a large L shaped extension to the rear and left that appears to date from about the 1960s and encloses part of the garden to that side of the house. The drive runs along the south side of the site to the far end of the plot and provides access to no.99a, which is to the west. There is a narrow strip of land between the drive and the south boundary, separated from the drive by a retaining wall about 2m high near the entrance, reducing to the same level next to the gate to 99a.

2.2 The site is about 65m deep by about 50m wide at the front (east) narrowing to about 30m at the rear. The building and extension occupy most of the eastern end, enclosing a small grassed lawn with a large goat willow growing on one edge. The main open space is a lawn to the west of the building, with some trees and shrubs round the edges, and there are some trees on a narrow strip between the north side of the building and the boundary that side.

Restrictions

Conservation area

2.3 Camden Council's web site shows that the site is in Hampstead Conservation area and there are records of two notices under Section 211 to carry out works to trees.

1. Camden ref 2016/1237/T. Notification to carry out works to 18 trees, all but two at no.99. Records include sketch plan and redacted objection from third party. There is no decision notice on the web site, but the record shows that Camden did not object to any of the

works, which included pruning and felling. There are some minor discrepancies and errors, but the trees shown as being felled have all gone and most of those recommended for pruning are still present and have signs of work being done.

2. Camden ref 2020/0574/T . Section 211 conservation area application and decision notice dated March 2020, advising that the council did not object to the horse chestnut, tree 5 in this report, being reduced back to previous points. From the tree's appearance that was done.

Tree preservation order (TPO)

2.4 This covers several addresses and the only trees shown at no.99 on the plan are two individuals listed as T15 & 16, both to the south of the entrance (left as seen from the road) and identified as thorns. There are currently no thorns or similar trees in those locations and these two evidently died or were removed some time in the 65 years since the TPO was made.

2.5 There are no records of the thorns being removed, which is not unusual given the time span. The existing TPO will not cover new trees planted as replacements, unless the previous trees were removed illegally, or because they were dead, dying or dangerous and there are no records of that either

2.6 I have not made any further enquiries, but from the available records of conservation area notices and decisions it appears that there are no other TPOs.

3 Trees

3.1 Most of the significant trees are on the south side of the drive and round the sides of the lawn. There are also numerous smaller ones, mainly holly and yew, which are shade tolerant and have grown under the larger trees. Some of these are evidently self-seeded although the hollies 20, 22 and 23 might have been planted to supplement the hedge they are growing in.

3.2 Most of the trees are sound and healthy, but some are in poor condition and need to be removed before they cause damage or for safety. Tree 7, a beech, has seeded itself next to the corner of a buttress in the boundary wall to no.97 and the base of the trunk is distorting round it as it grows. So far the wall appears to be sound, but further growth could damage it and the tree's stability is suspect as it leans heavily over the drive. (photo 1)

3.3 Tree 19, the goat willow in the enclosed lawn has extensive decay in a wound in the lower trunk. It was possible to push a blunt probe 400mm into this without with little resistance, indicating that the decay is deep and extensive. There is also decay in a stump above that and signs of decay in the main fork. It has been reduced but is beyond any practical remedial work and should be removed. (photo 2)

3.4 Tree 33, a cherry to the north of the building is dying and no.34, nearby is in severe decline after being cut back severely.

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. Under open ground, most roots are in about the upper metre of the soil and spread more or less uniformly from the tree, but they are affected by obstructions and variations in growing conditions, so depth and spread are often less uniform near roads and buildings.

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 has proven effective in most cases. In fact most root systems spread much farther, so RPA shapes can be adjusted where appropriate, for instance where ground conditions make root spread asymmetrical, or to allow for work within the 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

Constraints

5.1 Rooting conditions in much of the grounds of no.99 are reasonably uniform, so in the open areas the circular RPAs will be a reasonably accurate reflection of actual root spread.

5.2 However the retaining wall on the south side of the drive will be a barrier to root spread from the trees on the south side, particularly at the lower end near the entrance. There are other retaining walls that will block root spread along the light well next to the south and east sides of the new building and the north wall of the building itself, which is built into the bank. These are indicated on the tree protection plan and combined with the RPAs and low retention categories of some of the trees, particularly 19, 33 and 34, indicate that there are no significant arboricultural constraints in the vicinity of the existing building.

Planning implications

5.3 Normally it would be necessary to give Camden Council six weeks notice of any proposed tree removal or pruning, but any work needed to implement a proposal with full planning permission has deemed consent.

5.4 Trees 19, 33 and 34 are in such poor condition that they could be removed under the exemption for removing dead, or dangerous trees, although if that exemption is used there is a duty to plant a tree of an appropriate size and species at the same place as soon as they reasonably can. If trees are removed under the normal six week Section 211 notice the council have no power to require replacement planting, unlike trees covered by a TPO.

5.5 Given the above points the most appropriate option here would be to remove trees under consent for building work with a landscaping scheme in which new planting is designed to suit the new layout rather than simply one for one replacement of the previous trees.

Simon Pryce

Simon Pryce, BSc, FArborA, RCArborA, CBiol, MICFor

Photographs

1) Base of tree 7 and boundary wall to no.97

2) Steel probe in decaying wound at the base of tree 19. This went in 400mm with minimal resistance.

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 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 as shown on the plan, starting near the entrance, going along the left hand side of the drive to the gates to 99a, then from the entrance going clockwise round the grounds of no.99.													
Trees left of the drive to no.99a													
1	Holly	MA/N	6	2	3	3	2	200 2x80	2.8	24	5	Some ivy on the trunk, has been cut back to clear the drive.	C
2	Yew	Y/N	7	2	4	3	3	180 120	3.4	37	4	Healthy young tree, also cut back on the drive side	C
3	Norway maple	M/N	22	7	5	4	7	800	9.6	290	9	Growing on the boundary, ownership unclear and the diameter had to be estimated. Has been crown reduced about two years ago and is growing back vigorously.	C
4	Yew	MA/N	6	3	2	2	2.5	140	1.7	9.3	1	Healthy young tree, growing under the horse chestnut but is shade tolerant and not being suppressed.	C
5	Horse chestnut	M/N	11	5	5	6	5	890	10.7	359	5	Has been crown reduced and is repollarded regularly, the last time about one year ago to judge from the regrowth, which is healthy looking.	C
6	Holly	MA/N	6	3	2	2	1.5	120	1.4	6.5	1	Growing back from a cut stump, under the other trees but not unduly suppressed.	C
7	Beech	MA/N	20	7	7	6	6	510	6.1	117	4	Rooted next to the building wall. It does not appear to have damaged the building so far, but the lower trunk and root system are distorted and it leans heavily over the drive and it will cause significant problems if retained.	U
8	Birch	M/N	18	4	0	3	6	350	4.2	56	5	Leans heavily due to growing near the beech, otherwise sound and healthy looking.	C
9	Holly	MA/N	10	4	5	4	5	210	2.5	19	2	Foliage slightly sparse, otherwise good.	C
10	Holly	MA/L	14	1	2	4	1	220	2.7	23	2	Possible offspring of 27. Slightly sparse, otherwise fair.	C
11	Sitka spruce	MA/N	10	1.5	1.5	2	1.5	160	1.9	12	2	One sided due to being shaded by other trees.	C
12	Birch	MA/L	14	1	2	4	1	240	2.9	26	5	Leans and suppressed by the other trees	C
13	Holly	MA/L	13	2.5	2	3	2	210	2.5	19	5	Sparse and drawn up due to growing near the other trees.	C
14	Birch	MA/N	20	5	6	5	7	430	5.2	83	8	Large healthy dominant tree	B
Grounds of no.99													
15	Flowering cherry	MA/L	7	2.5	2	2	2.5	190	2.3	16	3	Poor specimen, reduced severely and has some shoots growing from the stump. Still has some dead leaves killed by leaf scorch last summer, which is not particularly harmful in itself, but the tree is declining.	U
16	Magnolia	MA/N	7	4	4	5	4	2x 160	2.7	23	1.5	Some branches are crossing and rubbing but it is a healthy specimen.	B

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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						
17	Lilac	MA/N	5	2	2	1.5	1.5	2x 60	1.0	3.3	1	Small specimen tied back to the railings.	C
18	Magnolia	MA/N	8	5	4	3	3	180	2.2	15	2	Healthy specimen.	C
19	Goat willow	M/N	18	4	5	5	5	640	7.6	183	3	Large old specimen that has been reduced several years ago and is growing back rapidly. Has extensive decay in a wound on the trunk where a large branch facing the building was removed some years ago and in a stump above that. There is also suspected decay in a weak fork at about 8m. • *Needs to be removed for safety.*	U
20	Holly	MA/N	6	1.5	2	1.5	2	130	1.6	7.6	1	Cut back to clear the drive, poor but provided some screening.	C
21	Winter cherry	Y/L	7	4 x 1.5				120	1.4	6.5	1	Poor specimen, cut back badly.	U
22	Holly	Y/N	5	1	1.5	2	1.5	80	1.0	2.9	1	Pair of trees growing in the hedge in front of the building, possibly self seeded or planted for screening. Have been cut back for clearance, slightly sparse but healthy.	C
23	Holly	Y/N	7	1	1.5	1.5	1.5	80	1.0	2.9	1		C
24	Wild cherry	M/N	14	7	6	5	6	380	4.6	66	5	Branch end over the building have been cut back and it has some leaf scorch from last season, but is sound and healthy otherwise	B
25	Japanese maple	M/N	7	6	3	4	5	260	3.1	31	1	One sided due to growing near the cherry but is a sound, healthy specimen.	B
26	Persian ironwood	MA/N	7	3	3	3	3	270	3.2	34	2	Growing among the shrubs next to the drive. Topped at about 4m and growing back vigorously.	C
27	Sitka spruce	M/N	24	4	4	4	2	430	5.2	83	5	Common forestry tree, not often found in gardens. Healthy specimen, growing well.	A
28	Yew	MA/N	12	4	3	4	3	240	2.9	26	2	One sided due to growing near the other trees, sound and healthy otherwise.	C
29	Holly	M/N	15	3	4	4	5	210 160 180	3.8	44	4	Slightly drawn up due to growing near others but sound and healthy.	B
30	Hornbeam	M/N	19	7	8	7	7	480	5.7	103	4	Rooted on a bank and leans down the slope but is sound, healthy and well rooted.	B
31	Yew	MA/N	8	3	3	4	3	180	2.2	15	2.5	Under the hornbeam, with several other smaller yews. Shad tolerant species, not being suppressed.	C
32	Norway spruce	M/N	11	3	3	3	3	270	3.2	33	3	Ina planting bed near the top of a retaining wall. Lower branches have been removed and there some minor die back above the building, otherwise fair.	C
33	Cherry	D	7	2	1	3	3	320	3.8	46	3	Has some life in a few lower branches but is declining rapidly.	U
34	Cherry	M/L	12	2	2	3	2	250 180 240	47	69	5	Badly topped in the past, creating large wounds. Regrowth has been poor and there are scorched leaves from last season. Beyond any remedial work.	U

Site: **99 Frognal, Hampstead, London,**

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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						
35	Plum	M/N	5	3	2	3	3	180 160	2.8	25	2	Has a narrow fork between the two trunks but that is reasonably well formed. Has been pruned regularly and is sound and healthy.	C

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Site: **99 Frognal, Hampstead, London,**

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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.

Site: **99 Frognal, Hampstead, London,**

Inspection date: **16 February 2022 by Simon Pryce**

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**