Simon Pryce Arboriculture

Report

Client:	**Mr N Khamissa**
Site:	**10 Christchurch Hill, Hampstead, London, NW3 1LB**
Subject:	**Trees and proposed building work**
Inspection date:	**31 July 2014**
Report date:	**12 August 2014**
Reference:	**14/066**
Author:	**Simon Pryce, B.Sc., F.Arbor.A, C.Biol, MSB, MICFor** **Arboricultural Association Registered Consultant**

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REGISTERED CONSULTANT

1 Introduction

1.1 This report has been prepared on the instructions of Ashton Porter Architects, who are acting for Mr N Khamissa in respect of a proposal to carry out building works at 10 Christchurch Hill, London, NW3 1LB.

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

1.3 The site was visited and the trees inspected on 31 July 2014. The inspection was visual and made from ground level, with no climbing or test boring as these were not warranted.

1.4 The trees were measured, their maturity, health and structural condition assessed and each was assigned to one of the four retention categories [A,B,C,U] specified by BS5837. The individual description and other relevant information are contained in the attached schedule and it is shown on the site plans, based on originals prepared by Ashton Porter.

2 Background

The site

2.1 No.10 Christchurch Hill is a modern house with two main storeys and a lower ground floor with a light well at the front, while at the rear it opens into a partly sunken garden. The site has a natural slope down from the rear to the front, so the far end of the rear garden is raised to form a terrace level with the main first floor. At the left hand (W) end of this is a raised planting bed approximately 2m deep by 3.2m wide and about 0.9m high, which appears to have been built as part of works carried out in 2001.

Trees

2.2 The most significant tree within no.10 is an ornamental crab apple growing in the raised bed in the rear garden. The only other trees within the site are a row of two birches and a rowan in the front garden, all planted about three years ago and still attached to their planting stakes. There is also a middle aged lime near the front right hand corner of the property, growing in the rear garden of 13 Gainsborough Gardens. This has been pollarded early in its life and more recently has been reduced moderately and the regrowth cut on a regular basis.

2.3 The site is in Hampstead Conservation area and the lime is protected by a tree preservation order (TPO).

Proposal

2.4 This is shown on the drawings produced by Ashton Porter and is currently the subject of an application to Camden Council, their reference 2014/2116/P. It involves partly demolishing the exiting house to replace it with a new one with three main storeys and a basement. There is a rear addition at first floor level, extending into the sunken portion of the rear garden, but the raised terrace at the far end of the rear garden is retained, together with the planting bed at its left hand end.

2.5 The crab apple to the rear is shown as retained in the plans, as are the three at the front, although the front garden wall and the paving round them is modified.

3 Discussion

General comments

3.1 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 or minor level changes can be harmful. Construction near trees can also be harmful in less direct ways, such as soil compaction caused by heavy machinery and spillage of toxic materials such as diesel oil and cement.

3.2 British Standard 5837: 2012, Tree in relation to design, demolition and 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.

3.3 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 has an area equivalent to a circle with a radius 12 times the trunk diameter at 1.5m. The shape and layout of the RPA can be modified, if this is deemed appropriate, particularly where there is evidence that root spread is uneven, for instance where the tree is in a place confined by deep foundations or similar features.

Implications for this case

Crab apple, tree 1

3.4 Like the other trees this one is in the conservation area, but is a small specimen, almost completely hidden from anywhere apart from the rear garden of no.10 and the immediately adjacent ones. As a result it makes little contribution to public amenity and has little scope for more growth that might make it more prominent or widely visible. The proposal involves some major alterations near tree 1, but the planting bed in which it is growing is retained unaltered, so it is not vulnerable to root damage or disturbance as a direct result of the proposal. The crown overhangs part of the sunken garden where new steps are to be built up to the rear terrace and might need some light trimming to clear the first floor extension, but it is a healthy young specimen, so that is well within what it would tolerate. It is already uneven in shape and spreading to fill much of the rear garden, so light pruning to give a more balanced shape would be appropriate, even without the proposed building work.

3.5 The tree is well away from the main work area and access route, so is not unduly vulnerable to indirect damage. The main way in which it might be harmed would be if heavy or contaminating materials were stored on the soil in the planting bed, which can be avoided simply by fencing round it to prevent access during the work. The light pruning referred to above would also keep it clear of the new extension.

Trees at the front, nos.2 - 4

3.6 There are some changes in layout near these trees, which could be damaging, particularly to no.2, and they are close to the only access, so are also vulnerable to incidental damage from plant or delivery vehicles. The RPAs are relatively small, so one option would be to enclose them with suitable protective fencing. However they are small and have only been present for about three years, so the root systems will not be fully established and therefore they could be transplanted without undue difficulty. A more practical option than trying to protect them would be to remove them for the duration of the work then to replant. That could either be done with the same trees, as there are specialist contractors that will lift and store trees then replant them, or completely new trees could be put in, they are available in these sizes. Planting back into new pits would also give better growth than working round retained trees.

Lime, tree 5

3.7 If this tree's RPA is drawn as a circle part of it is within the site. However the area concerned is 5.7m^2 amounting to about 6.4% of the RPA. That is well within what a healthy tree like this will tolerate and in practice it is likely that these figures over estimate the proportion of the root system under the site for two main reasons:

1. The boundary wall will tend to act as a barrier, so roots are more likely to exploit the better conditions in the garden in which the tree is growing and:
2. The RPA is calculated from the trunk diameter, but the amount of absorbing roots is proportional to the volume of live foliage. The pollarding, crown reduction and regular pruning of regrowth will have contained the growth of the crown and the root system, so its extent will be less than might be suggested by the trunk diameter.

3.8 Any part of the root system under the road and pavement will be protected by the hard surface and, as the tree is in another property, the site safety fence will protect it against any incidental damage.

Restrictions

3.9 As the site is in a Conservation Area Camden Council must normally be given six weeks notice of any proposed pruning of trees over 75mm diameter at 1.5m. They can allow that 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. However any work immediately required to implement a proposal that has full planning permission has deemed consent. This would apply to tree 1, trees 2 - 4 are below the conservation area size limit. The proposal does not involve any work to tree 5.

4 Summary and conclusions

4.1 The crab apple is a small specimen that is not vulnerable to direct damage from the proposal. The risk of incidental damage is also low and it can be safeguarded with a simple fence round the planting bed.

4.2 The three trees in front could be protected during the work but a better option, would be to take them up for the duration of the work and either replant them or put in new trees.

4.3 The lime is not vulnerable to direct damage and the ordinary site safety measures will reduce the risk of incidental damage.

4.4 The method statement on the following pages details suitable tree protection measures. These are shown on the proposed site plan, which also serves as the tree protection plan specified by BS5837: 2012.

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Tree protection 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. Shorten branch ends of tree 1 to give an even radial spread of about 3m and reshape.

3. Protective fencing is to be erected as shown on the TPP, so as to prevent access to the planting bed containing tree 1.

4. Fencing is to be either sectional welded mesh fencing [e.g. Heras] or, as the planting bed is small and irregular in shape, plywood on a scaffolding framework would be an acceptable alternative.

5. The fence is to have a warning sign as shown in figure 1, or a suitable alternative giving the same information.

6. If it is necessary to move or work on the bare soil in the tree's root area the ground is to be protected by a single thickness of scaffold boards or 18mm min plywood placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a Terram ® or similar geotextile membrane. Alternatively one of the equivalent proprietary systems may be used.

7. Trees 2 - 4 are to be taken up and stored by a suitable specialist contractor then replanted after work is complete or are to be removed and replaced with new ones.

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

Work methods

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

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

11. Outside RPAs there are no arboricultural constraints on working methods.

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

Storage

13. No materials are to be stored within RPAs except on existing impermeable hard surfaces and where there is no risk of soil contamination.

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

Landscaping

15. Protective measures are to remain in place until all demolition, construction and hard landscaping are complete.

16. Trees 2 - 4, or their replacements, are to be planted in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape - Recommendations.

17. Outside RPAs there are no arboricultural restrictions on hard landscaping.

18. Within the RPAs 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.

Completion

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

Contact details

Position	Name	Phone	Mobile	e mail
Arboriculturist	Simon Pryce	01923 467600	07710 224906	info@simonpryce.co.uk
Architect	Ashton Porter	0208 372 1619		studio@ashtonporter.com
Owner	Mr N Khamissa			
Main contractor	TBA			
Site manager	TBA			

Figure 1 - Warning sign for tree protection fence

Site: **10 Christchurch Hill, Hampstead, London, NW3 1LB**

Inspection date: **31 July 2014 by Simon Pryce**

Tree no.	Species	Age / vigour	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 order as shown on the site plan, starting in the rear garden and going to the front.													
1	Ornamental crab apple. *Malus* variety	MA/N	6.5	3	4	5	3	140	1.7	9.3	2.5	One of the purple foliaged varieties. Healthy specimen growing in a raised planter that completely confines the root system. Has had some minor pruning carried out, mainly removing lower branches to provide clearance. Crown is very uneven in shape and could be improved by light pruning to give a more even, balanced shape with a spread of about 3m.	C1
2	Birch *Betula pendula*	Y/N	6	1.5	1.5	1	1.5	70	0.8	2.2	2	Healthy young tree planted about three years ago with the next two, slightly one sided due to being at the end of the row. This and the next two could easily be taken up and replanted after completion.	C2
3	Rowan *Sorbus aucuparia*	Y/N	4.5	1	1	0.5	0.5	60	0.7	1.5	2	Between the other two trees and less vigorous so is being suppressed slightly but is healthy otherwise.	C2
4	Birch *Betula pendula*	Y/N	6	1.5	1.5	1.5	1	65	0.8	1.8	2	Similar to 2, at the other end of the row so is also slightly one sided.	C2
5 *	Lime *Tilia x europaea*	MA/N	13	3.5	3.5	2	3.5	440	5.3	88	4	Has been pollarded at about 3m earlier in its life then left to grow on for a number of years and develop a larger crown. Has been reduced in the last year or so and is growing on vigorously. Has signs of possible minor decay at the pollard points but is sound and healthy looking.	**B2**

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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.
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]

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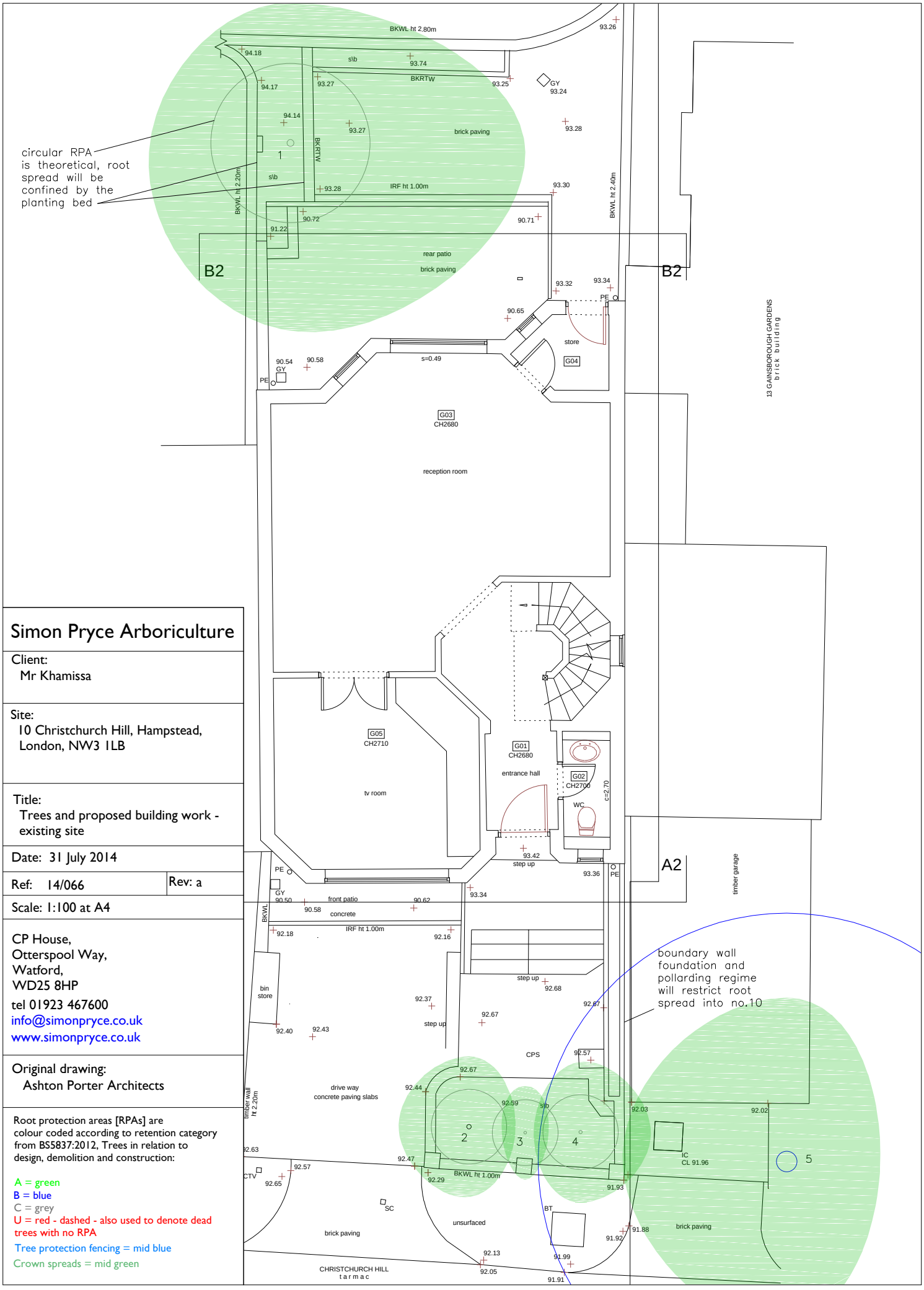
Tree categories – based on BS5837: 2012, Trees in relation to design, demolition and construction - Recommendations

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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Client:
Mr Khamissa

Site:
10 Christchurch Hill, Hampstead,
London, NW3 1LB

Title:
Trees and proposed building work - existing site

Date: 31 July 2014

Ref: 14/066 | Rev: a

Scale: 1:100 at A4

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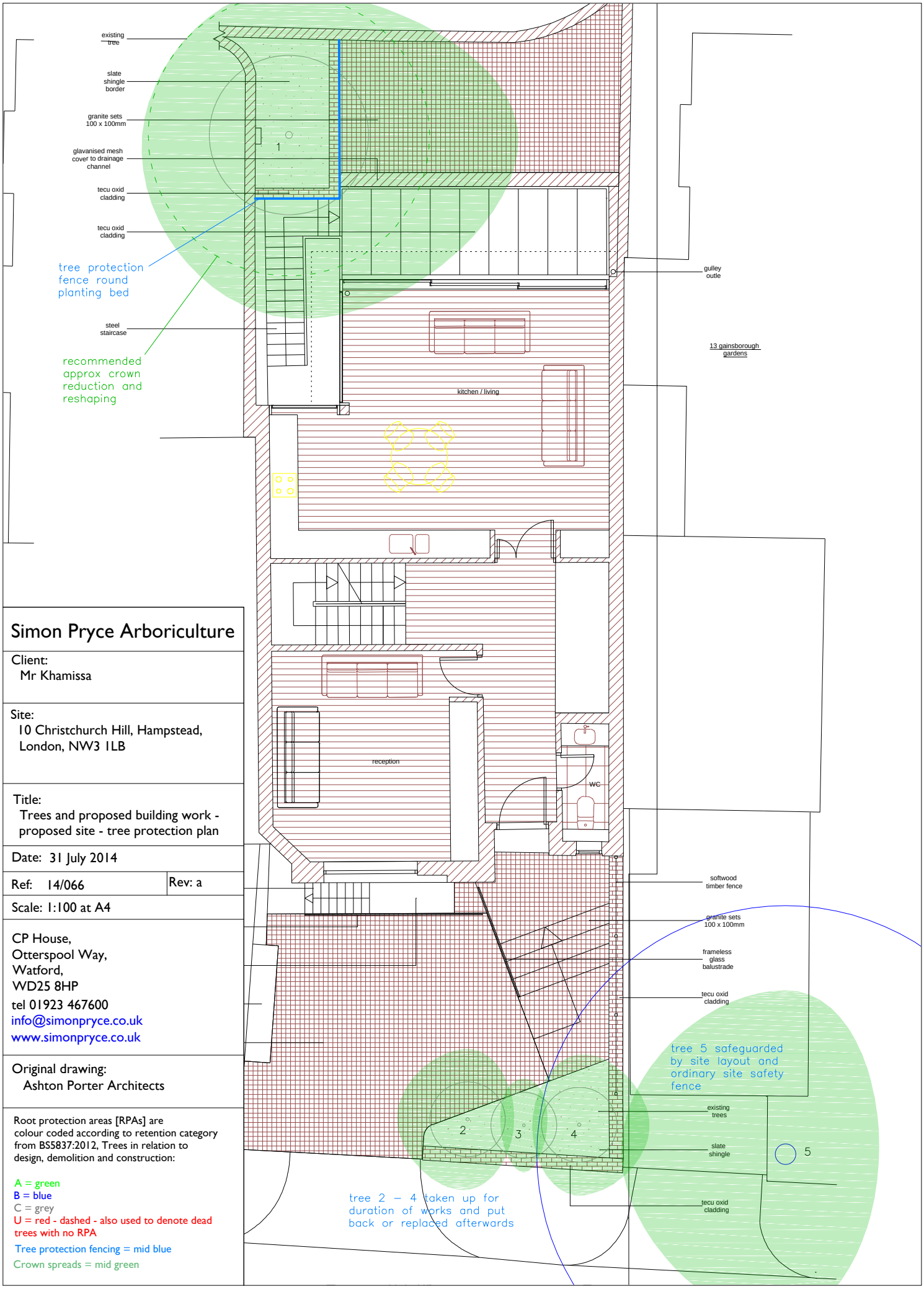
Original drawing:
Ashton Porter Architects

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 fencing = mid blue
Crown spreads = mid green



Simon Pryce Arboriculture

Client:
Mr Khamissa

Site:
10 Christchurch Hill, Hampstead,
London, NW3 1LB

Title:
Trees and proposed building work - proposed site - tree protection plan

Date: 31 July 2014

Ref: 14/066 Rev: a

Scale: 1:100 at A4

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