Wassells Arboricultural Services

TREE SURVEY & ASSESSMENT FOR TREES IN RELATION TO CONSTRUCTION [BS5837:2005]

SITE: 4 Frognal Close, Hampstead NW3 6YB

AUTHOR: Richard Wassell

18th September 2009

Contents

TREE SURVEY SCHEDULE FOR TREES IN RELATION TO CONSTRUCTION [BS5837:2005]

AND ARBORICULTURAL IMPLICATIONS ASSESSMENT

CLIENT: Papa Architects Ltd. On behalf of Arrow Marketing Solutions Ltd.

SITE: 4 Frognal Close, Hampstead NW3 6BY

DATE OF SURVEY: 1st September 2009

SURVEYOR: Richard Wassell
MIHort Kew Diploma MArb (RFS) NGC (nebosh)

KEY:
Age Class: Y= young. SM = semi-mature. M = mature. OM = over mature. V = veteran

Grading Category: As per BS 5837:2005 Table 1 – Tree quality assessment.

General Condition (GC): 1 = better than normal condition for age and species. **2** = average condition for age and species. **3** = poor condition for age and species. **0** = moribund or dead.

Management Recommendations: N = no work required**. DW** = remove dead, diseased and dying wood. **LC** = lift crown. **TC** = thin crown. **RC** = reduce crown. **P** = pollard. **SP** = scaffold pollard. **RE** = remove epicormic and basal growth. **FP** = Formative prune **F** = fell to ground level. **FG** = fell and grind out stump. **R** = carry out replacement planting.

Tree number	Species	Diameter @ 1.5 millimetres	Height Category metres	Crown spread category metres	Age Class	General Condition / Defects	Grading Category	Estimated future lifespan	Comments and Management Recommendations
T1	Tilia x euchlora Caucasian Lime	500	9/12	<6	M	GC=2 Previously scaffold pollarded at 6 M. Ivy covered stem and next to rear wall.			In rear garden of 14 Lindfield Gardens.
T2	Fagus sylvatica 'Purpurea' Copper Beech	400	9/12	6/9	SM	GC=2 Leaning to West. Ivy covered stem and next to rear wall.			In rear garden of 14 Lindfield Gardens.
T3	Eucalyptus gunii Gum Tree	700	18/21	N=4 S=4 E=5 W=5	M	GC=2 Stem damage to 2M on house side – OK Previously crown lifted and reduced.			
T4	Cercidiphyllum japonicum Katsura Tree	150	8	N=1 S=3 E=1 W=1	SM	GC=3 One sided on house side with moderate scale insect infestation			
T5	Aesculus hippocastanum Horse Chestnut	1200	6	N=8 S=3 E=3 W=6	OM	GC=3 Pollarded at 4 M with probable decay / stem decay			In rear garden of 42 Frognal Lane Ground level approximately 1 metre higher than 4 Frognal Close side.
T6	xCuppresocyparis Leylandii Leyland Cypress	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.
T7	Pinus sylvestris Scots Pine	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.

T8	Pinus sylvestris Scots Pine	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.
T9	Carpinus betulus 'Fastigiata' Upright Hornbeam	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.
T10	Carpinus betulus 'Fastigiata' Upright Hornbeam	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.
T11	Carpinus betulus 'Fastigiata' Upright Hornbeam	250/300	9/12	Part of group	SM	GC=2			Part of group in rear garden of 42 Frognal Lane – viewed from 3 Frognal Close. Ground level approximately 1 metre higher than 4 Frognal Close side.

TREE PROTECTION MEASUREMENTS:

Reference Standards and Regulations

BS 5837:2005
Trees in relation to construction. Recommendations
ISBN: 0580464180
Cross References: BS 3998:1989*BS 4428:1989*BS EN ISO 11091:1999*PAS 100:2005*Town and Country Planning Act 1990*Forestry Act 1967*Wildlife and Countryside Act 1981*Conservation (Natural Habitats etc.) Regulations 1994 *Countryside and Rights of Way Act 2000*Hedgerows Regulations 1997*Construction (Design and Management) Regulations (CDM) 2007*Environment Act 1994*NHBC Standards. Chapter 4.2:1999*BS 8206-2:1992*

Tree Number	Tree/Root Protection Radius *from centre of stem* Metres	Tree/Root Protection Area (RPA) Sq. Metres	Percentage affect of any proposal on the total RPA
T1	6.0	113	Maximum 20%
T2	4.8	72	Maximum 20%
T3	8.4	222	Maximum 20%
T4	1.8	6	Maximum 20%
T5	14.4	651	Maximum 20%
T6	3.8	45	Maximum 20%
T7	3.8	45	Maximum 20%
T8	3.8	45	Maximum 20%
T9	3.8	45	Maximum 20%
T10	3.8	45	Maximum 20%
T11	3.8	45	Maximum 20%

Key Points for Protecting Root Zone of Trees:

**** The Root Protection Area (RPA)** = the area surrounding a tree that is considered to contain sufficient rooting volume to ensure the survival of the tree in the future. The root system is typically concentrated in the uppermost 600 – 1000mm of the soil and is not necessarily symmetrical around the tree, being dependant on a number of factors such as water, nutrients, oxygen, soil penetrability and physical obstructions such as existing foundations or changes in level (terracing).
The RPA is deemed to be a minimum area, which should be left undisturbed around each retained tree. This area is portrayed as a circle around each tree on the Tree Protection Plan drawing but where there appears to be restrictions to root growth the circle is reshaped to reflect more accurately the likely distribution of the rooting area of the tree concerned.

1. AVOID building works within the RPA if at all possible but if not then carefully consider the following points. Where RPA is likely to be severely affected because of site design constraints then felling and planting a replacement(s) in a more suitable location on the site will need to be considered.
2. Where possible do not use strip foundations within the RPA, if absolutely necessary consider using a trenching saw or excavate by hand to avoid 'shatter damage' to the root system.
3. Consider using piling techniques for foundations @ maximum 350 mm diameter with ground beams on or above the surface of the root zone.
4. Do not exceed entering the root zone by more than one fifth of RPA radius.
5. Do not trench tangentially across the root zone for footings and services unless it cannot be avoided.
6. Consider 'no dig' techniques for services installation, with radial service lines being preferable to tangential across the root zone. Where this is undertaken then boring must be carried out below 600mm deep.
7. Any hard surfacing, paths and roads need to have the same considerations for the RPA and as in the above points. Where possible paths and hard surfacing (patios etc) need to be surface constructed and semi-porous to allow water penetration and gaseous exchange into the root system of trees.

ARBORICULTURAL IMPLICATIONS ASSESSMENT

General Considerations:

The majority of the trees on the site and in adjacent properties are of amenity value and offer good screening and vertical emphasis within the landscape scene of the area around the site.

The trees that could potentially be affected by the proposed building works are T1, T2, T5 and T6.
In terms of the guidelines within BS 5837 the root protection areas (RPA) of these trees are or are likely to be within the proposed ground works area for the foundations and general construction area of the new build.
Specific requirements to prevent unnecessary intervention with the root systems and superstructure of the individual trees, which could affect the long term health of the trees concerned, is described below in the specific requirements for the trees listed.

The remaining trees on the site are described within the management recommendations of the Survey Schedule on page 3. Where possible those trees recommended for retention should be included within any proposed landscaping for the site.

Specific Considerations:

Trees T1 and T2:
These 2 trees form an important screening group and are situated close to the boundary wall of 4 Frognal Close but in the rear garden of 14 Lindfield Gardens. They will be affected by the proposed development to the rear of 4 Frognal Close where a void going down 3 metres is proposed to be dug in line with the rear wall and very close to the 2 trees. The excavation will exceed the maximum of 20% intervention into the RPA as recommended by BS: 5837 and is most likely to cause considerable damage to the root zone of both these trees. The void area could be reduced away from the boundary wall by 3 metres, which would allow enough tolerance to carry out specific root pruning to mitigate and minimise potential long term damage to the trees concerned. The methodology for this would be dealt with as part of an Arboricultural Method Statement for the site.

Tree T5:
This tree has been low pollarded at 4 metres late on in its life time, which is likely to be causing the onset of decay into to the main stem at that point. The tree is now over mature and declining in both its structural strength and physiology (overall health, condition and function).
The tree could possibly be affected by the proposed development to the rear of 4 Frognal Close. However, the tree is situated in higher ground in the rear garden of 42 Frognal Lane at approximately 1 metre above the existing level of the land on this boundary of 4 Frognal Close. It is likely that the

rooting zone of this tree will be mainly towards the garden of 42 Frognal Lane, because of this terracing affect and not a typical RPA as described in BS: 5837. Excavation for the extension is unlikely to encounter much rooting in this area but care will need to be taken when excavating this area in case roots are encountered. The methodology for this would be dealt with as part of an Arboricultural Method Statement for the site.

Tree T6:
This tree is a semi-mature Leyland Cypress in good condition and provides privacy screening for this section of the garden along with the other nearby trees in this group, which are also listed in the schedule.
The tree could possibly be affected by the proposed development to the rear of 4 Frognal Close. However, the tree is situated in higher ground in the rear garden of 42 Frognal Lane at approximately 1 metre above the existing level of the land on this boundary of 4 Frognal Close. It is likely that the rooting zone of this tree will be mainly towards the garden of 42 Frognal Lane, because of this terracing affect and not a typical RPA as described in BS: 5837. Excavation for the extension is unlikely to encounter much rooting in this area but care will need to be taken when excavating this area in case roots are encountered. The methodology for this would be dealt with as part of an Arboricultural Method Statement for the site.

Important Note:

Where trees are to be retained then any proposed foundation works falling within the RPA of trees that are to be retained should not be any closer than **0.8 X RPA radius** of the tree, measured from the centre of the stem. Where any foundation works occur within the RPA there will be a requirement to dig carefully and ensure any roots encountered of 25mm plus in diameter are pruned correctly. The Tree Protection Plan and Method Statement for the site will describe more fully the requirements needed to protect the tree during the construction phase.

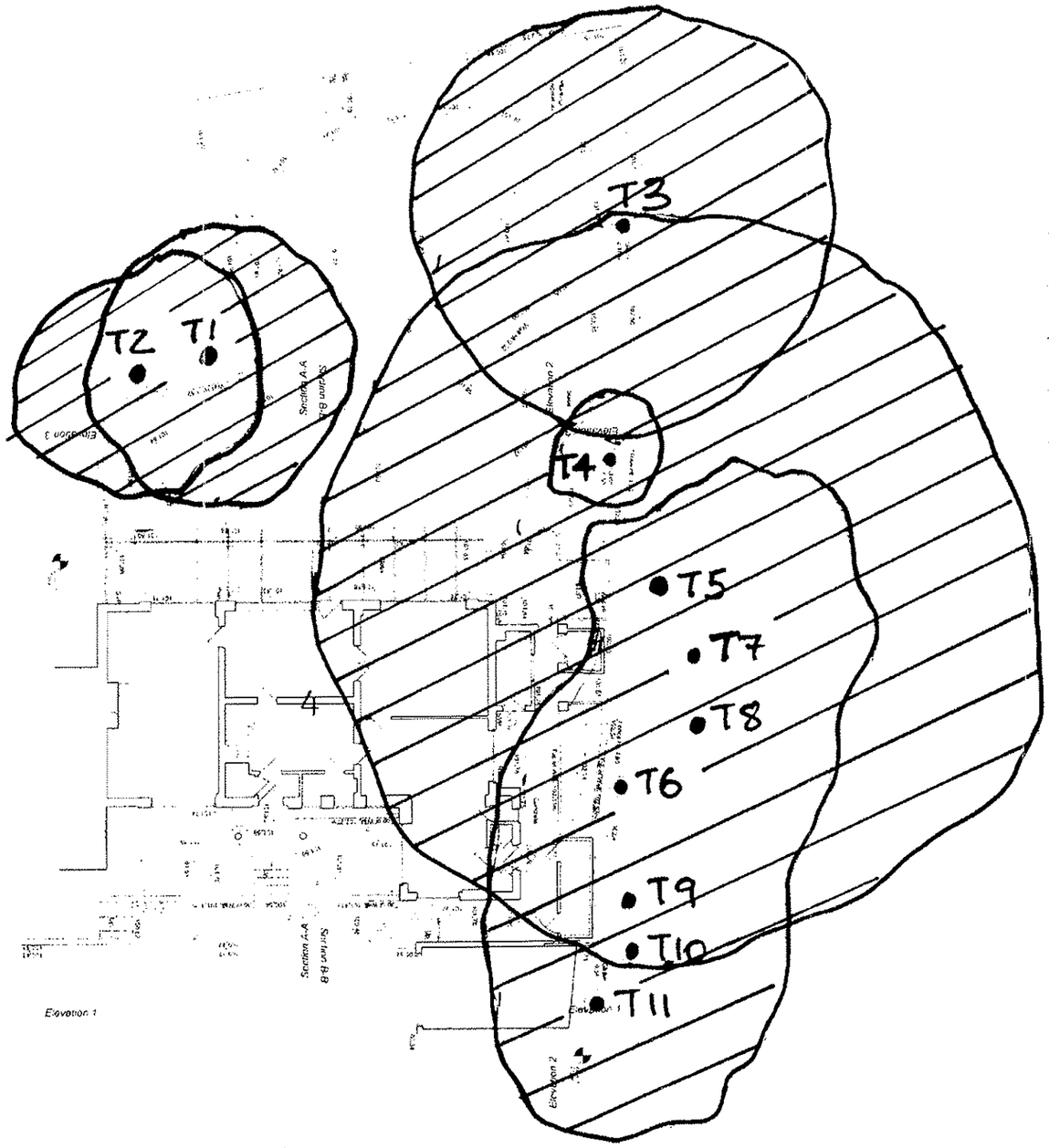
References:

1. Existing Site Layout – Papa Architects Ltd.
2. Tree Survey overlay plan on existing site layout - RJW
3. Proposed Floor Plans – Papa Architects Ltd.
4. Photo gallery – 5 pictures taken on 01/09/2009
5. BS 5837:2005 – Trees in Relation to Construction - Recommendations

= RPA OF TREES

T1 = TREE NUMBERS

RJW.



PAPA

Revision

Project title
4 Frognal Close
Hampstead,
London NW3 6YB

Drawing title
Existing Site layout + RPA

Client
Arrow Marketing Solutions Ltd.

Scale
1:200@A3

Date
July 2009 SEPT 09

Drg. no.
0923_98_101

Notes
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