TREE PROJECTS

PROFESSIONAL &
TECHNICAL ARBORICULTURE

Report on Trees

Flat 2, 104 Fitzjohn's Avenue

London

NW3 6NT

DOCUMENT 1512 - 0590
PLANNING SUBMISSION
071215

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SUMMARY

This report describes two Lime trees at Flat 2, 104 Fitzjohn's Avenue NW3 in context of British Standard 5837: 2012 Trees in Relation to Design Demolition and Construction.

The trees are protected by virtue of being located within a designated Conservation Area and at least the front garden tree benefits from a Tree Preservation Order (TPO Ref 21H).

Tree Projects were brought to site following commencement of landscape works and in accordance with advice of Camden Council, these works were halted and are to be subject to consideration as a part of a planning application that also presents internal alterations.

In context of development in proximity to trees, it is my view that the scale of refurbishment works as proposed is modest and relatively light-weight by comparison to say basement digs and works requiring substantial demolitions. The trees are however large and their Root Protection Area covers effectively app parts of both front and rear garden

I present therefore in context of protecting trees during refurbishment and make recommendations for treatment of external areas to allow safe implementation of landscape proposals.

I make recommendations for the construction and reconstruction of planters and the front garden wall in a manner that extends, as far as reasonably possible, the longevity of these elements given the prospect of future influences arising from future tree growth and discuss, in indicative terms, tree protection requirements.

With care and attention to landscaping details and protection of tree Root Protection Area, I conclude that the proposals can be implemented without risk of harm to either tree or the amenities they provide.

INTRODUCTION

1.1 **Instruction:** I am instructed by Mr James Carmichael on behalf of our mutual client to provide an arboricultural submission in support of an application for development at Flat 2, 104 Fitzjohns Avenue

1.2 **Qualifications and experience:** I have based this report on my site observations and the information provided in the light of my professional knowledge. I have experience and qualifications in arboriculture, and include a summary in Appendix 1.

1.3 **Documents and information referred to:**

- Copy of site as existing and proposed drawings prepared by Richard Cohen Architects ref 1512-1029 and 1512-1030.
- British Standard 5837:2012 Trees in Relation to Design Demolition and Construction.

1.4 **Scope and Limitation:** This report is concerned with the single planning application described within the documents at 1.3. It is provided solely to the appointing client and his agents and is not transferable. Tree inspections are from the ground only unless indicated otherwise. Advice relating to tree condition is limited to the constraints of date of survey and accessibility at the time of inspection.

1.5 **Relevant Background Information:** Initial site clearance works have been halted by Camden Council pending the submission of a planning application to which this report responds. Landscape ground works had commenced and at the time of my inspection the front garden path and steps had been taken up, the rear garden patio, planters and surfaces removed and the existing patio area deepened into the rear garden by cutting back of soil by approximately 1200mm. Prior to preparation of this report, I made recommendations for minor alterations to the landscape scheme and, I provided details for annotation of the site as proposed drawing (1512-1030), all of which have been accepted and incorporated into the submission.

2 TREE CONSTRAINTS ASSESSMENT

2.1 **Identification and location of the trees:** Two trees on site are recorded with reference to BS 5837. They are described within a tabulated Tree Schedule and are drawn on a Tree Schedule Plan, both at Appendix 2. For immediate context, an extract of the tree schedule plan is shown below at Fig 1:

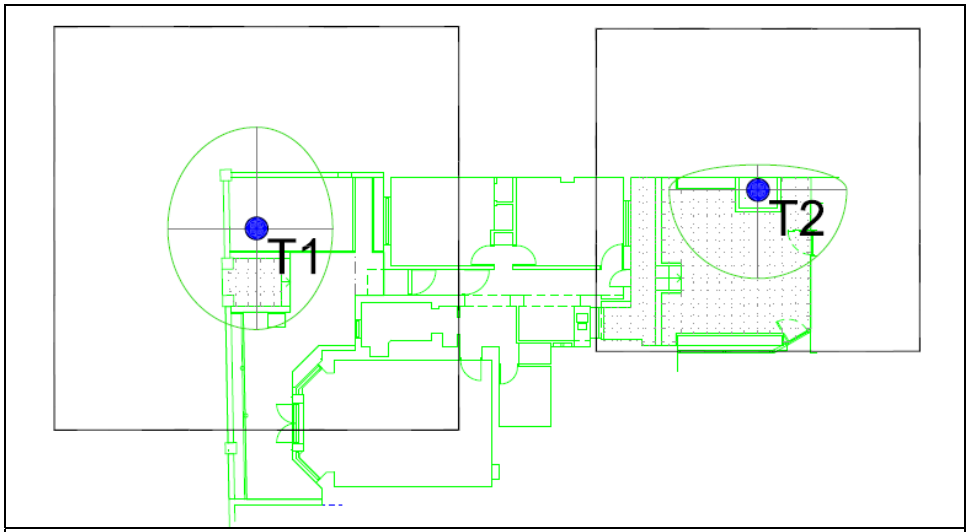


Figure 1: Extract of Tree Schedule Plan (See Appendix 2)

2.2 **Individual Tree Assessment and Assignment of Root Protection Area (RPA).** BS 5837 provides a basis for assessment of tree RPA which is a calculation based on a multiplication of tree stem diameter. It recommends trees are measured, and then assessed in several ways which include (but not exclusively) contribution to amenity/ overall condition and life expectancy. A tree

grading system is advocated, the details of which are outlined within the explanatory notes which accompany the tree schedule at Appendix 2.

BS 5837 advises that tree RPA may need to be adjusted to account for below ground impediments to rooting. This is particularly so in urban areas with level changes, the foundations of buildings, and the footings of lighter structures such as garages out-buildings and garden walls etc. Nearly all the above apply at this property. Whilst tree RPA is plotted (as squares) unadjusted within the tree schedule plan within this report, work to the main body of the existing property footprint is not considered to be of direct significance to trees , however all activity external to it (including anticipated construction site activity and landscaping) is considered to be of direct significance. i.e. the whole external area of the front and rear gardens are to be treated as of significance to tree roots for practical purposes.

I now discuss trees in summary:

2.2.1 **Trees T1: Lime, *Tillia spp. a* B2 grade tree with 20+ years safe useful life expectancy.** This tree is a prominent front garden tree that is managed by cyclic crown reduction to an established framework. The control of the trees crown may be necessary to influence root impacts on soil shrinkage and in any event, to contain it within available space. A recent permission has been given to prune the tree once again (2015/5604/T). Existing landscape features, namely small retaining walls, paving and paths have been removed and bare earth remains. The front garden boundary wall has been deflected by the tree and is in need of repair.

2.2.3 **Tree T2: Lime, *Tillis spp. a* B2 grade tree with 20+ years safe useful life expectancy.** Located within the rear garden of the property this tree has also been reduced in the past with reduction on the northern side pretty much in line with the party wall boundary. Repeat pruning has recently been approved under Camden ref 2015/5573/T. Existing landscape features such as planter retaining walls around the tree (but not foundations) have been removed as have paving, steps and the retaining wall marking the transition from the patio against the rear elevation to the higher level of the main garden (aprox. 1m higher). At the time of my inspection a cut has been made into the main garden level by approximately 1600mm depth from the rear elevation. A very few small roots were observed and one root of 50mm diameter was seen to have been cut in the process however, I am surprised that no more roots than this have been revealed and I do not expect any harm to arise from the ground works undertaken thus far, especially in context of recently authorised crown pruning.

3 ARBORICULTURAL IMPACTS AND SCHEME DESIGN.

3.1 The landscape works that are proposed are modest and in my view, the two trees front and rear are not at risk of serious or significant harm where work is undertaken with due care and consideration. I believe it is fair to say that within the arboricultural industry, Lime are considered to be a hardy and resilient species in the face of disturbance by construction and ground works and furthermore, that crown reduction works will alter the root to shoot ratio of the trees such that the loss or a small proportion of minor roots will have no discernible effects.

3.2 It would be a misinterpretation to conclude that works as proposed can proceed carte blanch. Rather, the approach I present is one of care and attention to detail as to working method and, to have a strategy to deal with roots as and when they may be encountered.

3.3 I will discuss tree protection in Section 4 of this report however it is helpful to present areas of risk and the means by which each risk is dealt with. This is now summarised in Table 1:

3.4 Summary of Foreseen Construction Impacts and Remedies

On the basis of my site observations and the proposal, foreseen construction impacts are summarised:

RISK	PROPOSED REMEDY	
	Front garden Lime T1	**Rear garden Lime T2**
Damage to upper crown of trees	No risk anticipated due to height of low crown and nature of works. Material deliveries are recommended to take place to the rear. Deliveries to the front are complicated by on street parking and the business of Fitzjohn's Avenue.	No impact foreseen although hiab loading into the garden appears possible by virtue of existing bulk bags of aggregate. I saw no damage to low branches (aprox 3m above adjacent ground), and have recommended that this tree is crown lifted to 5m above adjacent ground to allow better infiltration of light: this should be considered as 'routine maintenance' irrespective of development.
General damage to roots during construction:	Areas where materials are to be stored should either be away from tree RPA or, materials loaded should be stacked on boards to spread load. Material preparation/ mixing for wet trades should be away from tree root protection area (forward of garages) or, undertaken in a bunded enclosure to control escape of liquid contaminants into the earth. No roots greater than 25mm diameter should be cut. Roots up to 25mm diameter that are cut should be cut by sharp secateurs or appropriate saw.	
Damage to roots by reduction of levels	Further level reduction required is nominal and need not be greater than 100mm except A) To remove spoil piled against the north boundary wall that has been recently deposited. B) Forward of the front bay window where two conifers are permitted to be removed: this soil is isolated from T1 by the drains structure to the south of the pedestrian gate. C) Around the bole of the tree where landscape edging board is required. NO roots greater than 25mm diameter will be cut.	No further level reduction is required in excess of 100mm: Paving is to be replaced with paving.
Damage to roots by enlargement of paved/ patio areas	An initial proposal to enlarge the path behind the front gate has been removed from the proposal with all new construction within formation for existing retaining wall, path and steps.	Prior to council intervention the patio area to the rear has been enlarged: I have advised seeing one root of 50mm diameter and scant small and fine roots. My advice is to form new steps and retaining structure as per the proposal which will leave a void of approximately 500mm which will be back-filled with good landscape grade sandy loam soil
Damage to roots by formation of foundations for retaining walls and planters	Low landscape retaining walls behind the gate and near to the tree are to be formed within the line and footprint of existing structure (now demolished). Raised beds are to be formed on concrete strip footing no deeper than 150mm below finished levels: Localised micro piles can be formed if additional support is required at the rate of 1 per meter only where trial excavation proves no roots greater than 25mm are present.	The raised bed around this tree has been demolished to ground level although footings remain. This bed is to be reinstated by construction off existing footings and, by formation of new strip footings no deeper than 150mm below finished levels: Localised micro piles can be formed if additional support is required at the rate of 1 per meter only where trial excavation proves no roots greater than 25mm are present. The new retaining wall is to be formed in the same manner as above with the addition if required of reinforcement to concrete elements. Drainage/ weep holes must be formed in this wall to limit potential saturation of the ground.
Damage to roots by demolition and reconstruction of front boundary wall	This wall and gate pier are to be demolished by hand work to ground (pavement) level. The project arboriculturist should attend to discuss and advise on re-construction and treatment of earth and roots which will need to be pared back to some degree. New brickwork is to be raised off existing footings and on the tree side, locally reduced to maintain up to 100mm clearance from live parts of the tree, where possible. A catnic lintel may be required.	

Table 1

4. INDICATIVE TREE PROTECTION METHOD STATEMENT.

4.1 Tree protective measures will be required and can be expected to be a matter specifically referred to in a positive planning outcome. The approach we would take is presented here in indicative terms. If acceptable to the council, our preference would be that this report and the protection requirements outlined are explicitly referred to in a positive decision notice so that work can proceed on site without undue delay

4.2 Tree protection can be defined as:

- A management and administrative action
- Physical components and method related conduct of site operations

4.3 Management of Tree Protection:

4.3.1 The contract administrator will be responsible for ensuring the main contractor and all sub-contractors are informed of the requirements of protection and, that a bill item and adequate resources (money) is set aside to ensure compliance with this requirement.

4.3.2 All principle staff and nominated sub contractors must on first attendance on site be inducted into the presence and significance of previously installed tree protection.

4.3.3 The main contractor must install tree protection prior to commencement of any further substantive construction or landscape work.

4.3.4 The tree protection provided must be considered in context of the construction programme. Should any conflicts be foreseen (large deliveries etc), temporary adjustments to protection must be considered with the direct contribution of the project arboriculturist.

4.3.5 A project arboriculturist would ideally be retained for the full duration of work on site, being available to assist should any adjustments be required to the tree protection plan and in the event of any tree related emergencies.

4.4 Physical components and conduct of site operations:

4.4.1 As indicated, tree protection must be installed immediately work resumes and then maintained for the full duration of substantive works. Due to the nature of the site (low intensity) and aspiration to proceed with external landscape works concurrent with internal works, traditional exclusion by use of barriers is not considered entirely appropriate.

4.4.2 **Tree stem protection** is to be provided by wrapping the stem of both trees in a thick wad of hessian to 1800mm above ground level, secured by rope.

4.4.3 **Ground protection** will be required where materials are to be stored which should comprise of a double layer of ply laid to staggered joints which is screw fixed to provide a monolithic surface. This is required in all areas where materials or waste on site (not forward of garage) are stored. The existing ballast on site should be used and as soon as possible after this, the ground released laid to ply as specified

4.4.4 **Treatment of roots.** In Table 1 I set out the scenarios where further, localised excavations for retaining walls and planters are required to implement landscape works and where roots may be encountered. For the avoidance of doubt it is accepted that no work will proceed that requires any roots greater than 25mm to be

cut. Any roots smaller than 25mm will be cut using sharp secateurs.

4.4.5 **Formation of sub-bases.** In areas where paving is to be laid and sub bases are required, only sharp sand will be used and where necessary any membranes will be gas and water permeable. Sharp sand has a low salt content and builders sand will not be used in any circumstances.

4.4.6 **Rebuilding the front boundary wall.** Once demolished to ground level, the project arboriculturist must attend site to assist with reconstruction in a manner that provides separation distance from future application of lateral force by the tree. The arboriculturist will oversee paring back of soils and small roots and advise on how to retain the earth ball and limit the infiltration of a gap so left with future debris and detritus.

5 SUMMARY AND RECOMMENDATIONS

On the basis of the above information and discussions, I summarise as follows:-

5.1 No trees are proposed to be removed.

5.2 Further ground works required to implement landscape works are minor and will be subject to the principle that no roots greater than 25mm will be cut or removed.

5.3 In areas where materials are to be stored on site, ground protection is required to spread load. Use of protective barrier is not considered realistic as on approval, landscape works will largely be coming up out of the ground concurrent with internal work.

5.4 Existing ballast on site (rear garden) should be used and once ground beneath is released, ply ground protection installed in event that the area is not to be paved immediately.

5.4 All landscape sub base and fabric materials should be salt free and gas and water porous.

5.5 On the basis of attention to landscape detail and by taking further arboricultural advice where necessary (front wall and in conflicting or unforeseen circumstances) the proposals do not present an unacceptable risk of harm to trees or to tree amenities

Nick Bentley
HNDH, RFS Cert Arb
4th December 2015

ARBORICULTURAL SUBMISSION TO
104 Fitzjohn's Avenue
APPENDIX 1

Brief qualifications and experience of Nick Bentley

1. **Qualifications:** HNDH Landscape Design & Horticultural Technology, Credit, Askham Bryan College, York, 1989. RFS Cert Arb 1991 Credit. Professional Tree Inspection, 2006.

2. **Practical experience:** As gardener, arborist and arboriculturist. Royal Botanic Gardens Kew (Wakehurst Place) as climbing tree surgeon. 15 years experience Local Government as an Arboricultural Officer: Leicester City Council, Wycombe District Council and latterly 8 years at the Royal Borough of Kensington and Chelsea handling all aspects of pubic sector tree management and procedures relating to the Town and Country Planning Act 1990 i.e. Development Control, public inquiries and informal hearings, tree preservation procedures and all aspects of control and enforcement thereof. Following a brief spell of 18 months as contracts manager of Arboricultural Association tree surgery contracting company I have been self employed from 2004 as a specialist tree planting contractor and, consulting arboriculturist for public and private clients and now continue to trade as Tree Projects Ltd.

3. **Continuing professional development:** Member of the Arboricultural Association and Royal Forestry Society and Associate of the London Tree Officers Association. Seminars/ Workshops: 2009: Veteran Tree Management, ISA; Trees and Climate Change, EtaLog, 2008: The Underground Movement, Barcham/ Bartlett seminar; CAVAT in practice training seminar with Chris Neilan/ Tim Moya Assoc; 2007: the Business of Arboricultural Consultancy, Arb Association; Through the Trees to Development, AAIS; 2006; Introducing BS 5837: 2005, Arb Association; Report Writing, Arb Association; Elite Bio-Mechanics, Mattheck/ Symbiosis Consulting; The Future of Tree Risk Management,

4. **Commissions undertaken:**

    - Planning consultancy to British Standard 5837 Trees in Relation to Construction; tree surveys and design advice for new builds, underground and above ground extensions, including method statements and tree protection plans.
    - Tree condition surveys and recommendations including data handling through Ezytreev and Confirm.
    - Providing advice on tree preservation matters, tree work applications and sub-contracting tree surgery operations.
    - Tree supply and planting.
    - Tree root investigations by trench formation and pile spotting by use of non percussive air spade and air vacuum excavation techniques

July 2013

ARBORICULTURAL SUBMISSION TO
104 FITZJOHNS AVENUE

APPENDIX 2

TREE SCHEDULE
EXPLANATORY NOTES
TREE SCHEDULE PLAN

No Pages: This plus 3

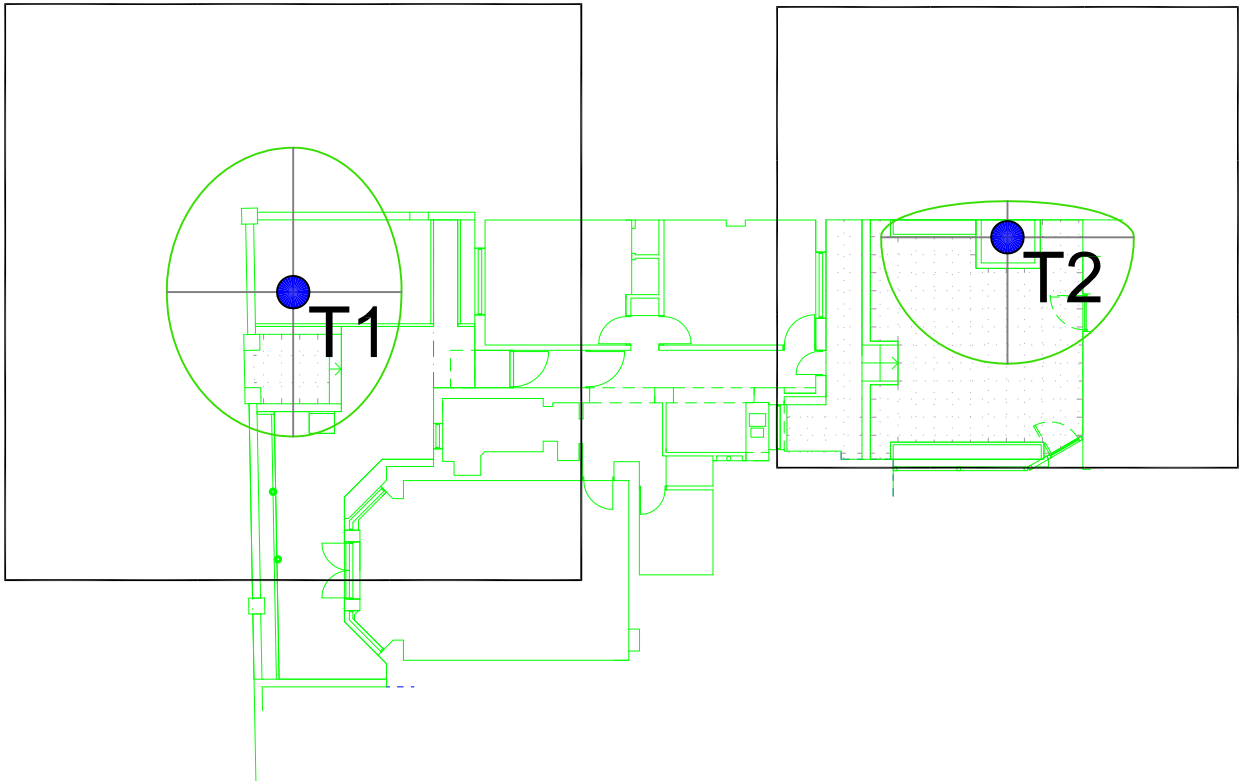
Tree Projects BS 5837 Survey to 104 Fitzjohns Avenue NW3																			
Date: 2nd December 2015																			
Weather: Dull/ Overcast															last filter column				
Tag	**Common Name**	**Latin Name**	**DBH**	**Stem Cnt**	**Height**	**Low Crown**	**Nth**	**East**	**Sth**	**West**	**Age**	**Life Exp**	**Condition**	**BS Cat.**	**Comments**	**Prelim. Mgt Recom.**	**RPA m2**	**RPA radius**	**RPA square**
1	Lime	Tilia (platyphyllos)	750	1	15	5	4	3	4	3.5	M	20+	Good	B2	Front Garden tree. Crown dimensions to reduction points/ recent permission to remove regrowth		254.5	9.0	16.0
2	Lime	Tilia (platyphyllos)	600	1	16	3.5	1	3.5	3.5	3.5	M	20+	Good	B2	Rear garden tree. Recent permission to reduce by up to 30%. Crown dimensions to reduction points	Crown lift to 5m	162.9	7.2	12.8

Explanatory Notes to tree survey schedule

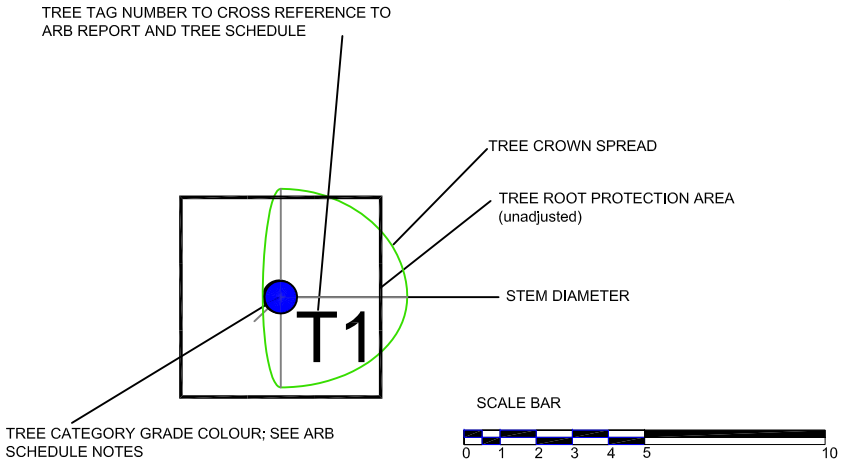
- **Tree reference (tag) number:** Individual trees are referred to by a 'T' prefix to a number, i.e. T1, T2 etc. Collections or distinct groups of trees may be assigned a G prefix to denote presence of a 'group'. Prefixes 'K' (young trees) and 'S' (shrubs) and 'H' (Hedge) show further arboricultural features
- **Name/ Latin:** Species identification is based on visual observations and the common English name of what the tree appeared to be is listed first, with the botanical name after. The botanical name is followed by the abbreviation spp if only the genus is known.
- **Measurements/estimates:** Stem DBH (Diameter Breast Height) and Height dimensions are taken by tape or laser unless indicated. (DBH in mm/ Height in m)
- **Stem Diameter:** This figure is taken at 1.5m above adjacent higher ground level using a specially calibrated 'diameter tape' and is recorded in millimetres. Multi-stemmed trees are measured below where the trunk forks. If two or more stems are present breaking from ground level, each stem is measured and relative locations described where possible using cardinal points. If taken lower than 1.5m for practical purposes the reading height is given.
- **Height:** Height given approximately to the nearest metre, May be derived from compensating lines of sight.
- **Stem Cnt:** number of stems observed (calculations to establish RPA difference between single stem [SS] and multi-stemmed trees [MS])
- **Low crown Height:** the generalised height of the crown above ground level, usually used to indicate access limitations, considering where branches arise from the trunk and the height of branch ends.
- **Branch Spread:** Crown spread is measured and given to the nearest metre or half metre from the face of the trunk to the tips of the live lateral branches, measured towards the cardinal points. Usually measured by pacing. For trees managed by pollard regime crown may be to pollard extent: check tree schedule.
- **Age Class:** Y=young, EM=Early Mature, MM=Middle Mature, M=Mature, OM=Over Mature, V=Veteran. Age is estimated from visual indicators and experience and it should only be taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records or local knowledge.
- **Life Expectancy:** the anticipated safe useful life expectancy of the tree in years. (< 5, 5-10, 10-20, 20-40, more than 40) a tree with less than 10 years safe useful life will ordinarily need to be felled unless retained for habitat purposes within an excluded area.
- **Physiological condition:** An assessment of the general health of a tree considering vigour, extension growth, crown density and presence of pathogens. G=Good, F=Fair, P=Poor, D=Dead,
- **Category Grading:** the grade of the tree utilising the cascade chart for tree assessment within BS 5837:2005 Trees in Relation to Construction. Trees are graded on arboricultural, landscape and cultural/ conservation values and in simplified definition are described:

    - **Category R/ U; Remove or Unsuitable: 'Those in such a condition that any existing value would be lost within 10 years and which, in the current context be removed for reasons of sound arboricultural management'.**
    - Category A: 'Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested.'
    - **Category B: 'Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested.'**
    - Category C: 'Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm'.
    - Further sub categorisation by numbering 1, 2 or 3 assign general values vis: 1; mainly arboricultural, 2: Mainly landscape, 3; mainly cultural/ conservation

- **Comments:** observations that may supplement assessments of condition or otherwise be significant.
- **Preliminary Management Recommendation:** Advice regarding tree surgery etc. Key: NW = No work. RP= Reduce to Previous Reduction Points. CR% = Crown Reduce (by % or m). CL = Crown Lift (to specified height AGL). CT = Crown Thin (by %). **Priority** (where specified) Priority 1 = Urgent works ASAP and certainly within 1 Month. Priority 2 = Complete within 12 months. Priority 3 = Non critical works to complete within 2 to 3 years.
- **RPA m2:** The Root Protection Area in square metres required by BS 5837.
- **RPA radius:** the radius of a circle of size equivalent to the RPA m2. The radius is taken from the centre of the tree plot.
- **RPA square:** the length of sides of a square equivalent to the RPA m2. the centre of the trunk of the tree to be positioned in the centre of the square



KEY TO TREE SYMBOLS



TREE SCHEDULE PLAN
104 Fitzjohns Avenue
NW3 6NT

TREE PROJECTS
THE MAISONETTE, 22 OLD PARK AVENUE
LONDON SW12 8TT

4th December 2015- REV A

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