Institute of Chartered Foresters
Registered Consultant

PATRICK STILEMAN LTD
ARBORICULTURAL CONSULTANCY

Arboricultural Association REGISTERED CONSULTANT

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TREE SURVEY REPORT

In accordance with British Standard 5837 2012 *'Trees in Relation to design, demolition and construction – Recommendations'*

Site
The Old School, Park Lane, Richmond, TW9 2RA

Client
Renworth Homes (Southern) Ltd

Prepared by
Patrick Stileman BSc(Hons), MICFor, Dip. Arb (RFS), M.Arbor.A

Date
2nd June 2012

Job reference:
DS07051201

1 INTRODUCTION

1.1 I am Patrick Stileman, Director of Patrick Stileman Ltd. I am acting on instruction of the client, Renworth Homes (Southern) Ltd. I have qualifications and experience in arboricultural consultancy and I have given details of this in Appendix 1.

1.2 Brief:

1.2.1 Patrick Stileman Ltd is instructed by the client to undertake a survey of trees which could potentially be affected by proposed development at The Old School, Park Lane, Richmond TW9 2RA in accordance with British Standard 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (hereafter referred to as BS5837). We are to survey all trees with stem diameters in excess of 75 mm at a height of 1.5 metres, including those off site which could pose a potential constraint to development.

1.2.2 Based on the data collected in the tree survey, we are to show constraints to development posed by trees at a preliminary level by means of a Tree Constraints Plan.

1.2.3 The purpose of the information provided at this stage is to give advice on the principal tree constraints in relation to development in order to assist the design process towards the preparation of an arboriculturally defensible scheme.

1.3 Caveats:

1.3.1 I surveyed trees at a preliminary level only. The survey must not be substituted for a tree risk assessment report. Detailed inspection including decay mapping, aerial inspections, root or soil analysis etc was not undertaken. In cases where I consider that further investigation is required I note this in the preliminary management recommendations column of the tree survey data.

1.3.2 The trees were viewed from public vantage points and within the site boundaries only. I had no access to third-party property.

1.3.3 This Tree Survey Report comprises Stage 1 of a five stage arboricultural process relating to planning. Stage 2 is the arboricultural input required during layout design taking account of arboricultural features and constraints; Stage 3 is the preparation of supporting documentation (Arboricultural Implication Assessment) when the layout is to our satisfaction; Stage 4 is the preparation of an Arboricultural Method Statement specifying how trees will be physically protected during the development process; and Stage 5 is the implementation, supervision and on-going monitoring of the works during development.

1.4 **Survey date:** Trees were surveyed by me, Patrick Stileman, on 25th May 2012.

2 TREE SURVEY

2.1 **Tree identification:** Individual trees have been allocated a number and groups of trees have been allocated a number prefixed by the letter G. Their locations are shown on the Tree Survey Plan drawing no: DS17051201.01 included on Page 10 of this report, and data pertaining to each tree or group of trees is located in the Tree Survey Data on Pages 8-9 of this report.

2.2 **Tree data:** In carrying out the survey I assessed the following for each tree and group of trees:

- Dimensions (height, crown spread, stem diameter, and height of crown base).
- Root protection area, based on stem diameter (See 4.6).
- Life stage and physiological condition.
- Structural defects of significance, and general condition. Assessment of the value that the tree provides from a wider landscaping perspective.
- An assessment of the likely remaining useful contribution in years.

Based on the above information, I have allocated a category (A, B, C, U) indicating the quality and value for each tree or tree group (in accordance with BS5837), to be taken into account when planning any future development.

3 STATUTORY PROTECTION

3.1 I am currently unaware if any trees at the site are protected by a Tree Preservation Order (TPO); however I have been informed by my client that the site is located within a Conservation Area which confers provisional protection on all trees (bar exemptions) with stem diameters greater than 75mm at 1.5 metres above ground. I have not been instructed to establish the TPO status of trees with the Local Planning Authority at this stage.

4 TREE CONSTRAINTS PLAN

4.1 Based on the information obtained by the tree survey I have prepared a tree constraints plan (TCP), drawing no: DS17051201.02 included on Page 11 of this report.

4.2 On the TCP, I have used different colours indicating tree crowns to distinguish between trees which should be removed for reasons of sound arboricultural management (red); trees which could defensibly be removed in order to facilitate development (blue); and trees with a higher retention priority which should, initially, be regarded as a constraint to development (green).

4.3 Category C trees are classified as trees of low quality; they should not impose significant constraints to design layout, and if necessary can defensibly be shown for removal in order to facilitate good design. If Category C trees can be satisfactorily retained within the proposed layout then consideration should be given for this.

4.4 Category B trees are classified as trees of moderate quality, which covers a large range. It is likely that most Category B trees are ones which should be retained and regarded as a constraint to development. Some Category B trees, particularly smaller individuals, are of insufficient value to impose significant design constraints and removal of such trees can sometimes be justified in order to promote good design (usually on the basis that mitigation is provided elsewhere on the site in the form of high quality new planting).

4.5 Category A trees are classified as trees of high quality and there should be a general presumption for retention of these trees.

4.6 The TCP shows the position of the Root Protection Area (RPA) for trees with a high retention priority as broken pink lines. BS5837 (Section 3.7) defines the RPA as a '*layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority*'. In other words, the RPA represents the **minimum** area around each tree in which the ground should remain largely undisturbed. The RPA is an area based on a circle with a radial distance of 12x the stem diameter at 1.5 metres in the case of single-stemmed trees, or 12x the combined stem diameter (calculated in accordance with a formula set out in BS5837) for trees with more than one stem. In situations where the site conditions clearly prevent consistent rooting around the tree (for example the presence of roads or buildings within the notional RPA circle) I modify the shape of the RPA to take this into account. At this site I have adjusted the RPA shape for Trees 1-3 and 8-9 (increasing them into the site) to take

account of compromised rooting zones caused by the wall, building and road. In addition I have off-set the RPA for off-site trees 4 and 6, partially moving them out of the site to take account of the boundary wall which is likely to restrict root development into the site.

4.7 At the design stage (Stage 2 – see Section 1.3.3), detailed advice should be given by the arboriculturalist, specifically in relation to the above ground constraints, namely:

1. Future growth predictions for the key retention trees where this is likely to be significantly different to their existing dimensions.

2. The effects of dominance and shading posed by trees in a) their current context, and b) taking account their future likely growth.

This level of detailed advice is beyond the scope of this report which is preliminary in nature.

5 SOIL

5.1 I am not aware if a detailed soil analysis has been undertaken at this site. I did not take soil samples while on site however I have looked at the British Geological Survey plan to establish the likely nature of the soil present. This indicates that the bedrock geology is London Clay Formation with superficial deposits above comprising Kempton Park Gravel Formation (sand and gravel).

5.2 There may be local anomalies not shown in the British Geological Survey maps and a more detailed site specific soil assessment should be undertaken if required.

6 KEY TO TREE SURVEY DATA

6.1 **Tree / Group reference:** Tree numbers as shown on the Tree Survey Plan. Where trees form a coherent group, they have been assessed as a group, and are shown in the survey and on the plan prefixed with the letter G.

6.2 **Species:** These are listed in the schedule by their common name. The botanical names of the principal species present are as follows:

False acacia: *Robinia pseudoacacia*
Sycamore: *Acer pseudoplatanus*
Elder: *Sambucus nigra*
Balsam poplar: *Populus balsamifera*
Incense cedar: *Calocedrus decurrens*
Buddleia: *Buddleia davidii*
Privet: *Ligustrum vulgare*

6.3 **Ht. (m):** The height of the tree is measured or estimated to the nearest half metre for dimensions up to 10 m, and to the nearest whole metre for dimensions over 10 m.

6.4 **Crown spread – NSWE:** Radial crown spread measured or estimated, rounded up to the nearest metre, for north, south, west and east.

6.5 **Crown base:** The height above ground level and orientation of the lowest permanent crown base (excluding basal, and small epicormic growth).

6.6 **Stem count:** For trees recorded as individuals, the number of stems recorded for the purpose of RPA calculation (where stem numbers exceed 5 an average diameter is assessed).

6.7 **Stem dia:** In the first column the stem diameter is recorded for trees with a single stem, or the first measured stem where there are fewer than five, or the average stem diameter for trees with more than 5 stems. The diameter of individual stems for trees with up to five stems is recorded in columns 2-5. Measurements are shown in mm, rounded to the nearest 10. In some situations it is not possible to measure the diameter of stems, and for these estimates are made. When stem diameters have been estimated they are written in *italics*. Measurements are taken in accordance with BS5837 Annex C. For tree groups, stem measurements are recorded for the largest tree in the group.

6.8 **RPA Rad:** This shows the radius of the notional RPA circle in metres to be centered on the tree, based on the calculation made using the stem diameter.

6.9 **RPA Area:** This shows the calculated RPA in m^2 for each tree (as individuals or within groups). If the notional RPA circle is adjusted (see 4.6) the area must be maintained. The RPA area is capped at 707 m^2, equivalent to a circle with a radius of 15m.

6.10 **Life Stage:** An assessment of the tree's stage of life, where: Y = young, SM = semi-mature, EM = early-mature, M = mature, and OM = over-mature.

6.11 **Phys. Condition:** The physiological condition of the tree, reflecting the condition of the vascular system as indicated by leaf and shoot vitality. The physiological condition is not a comment on the tree's structural condition. The physiological condition codes used are G = good; F = fair; P = poor; D = dead.

6.12 **Condition and observations:** Description of general tree condition, including structural integrity, the presence of hazards, pests and diseases which may affect the tree's retention span.

6.13 **Preliminary management recommendations:** Work required to trees for reasons of sound arboricultural management only, **not for development facilitation**. This is not to be taken as a list of tree work required prior to development activity, but provides management recommendations for trees in their current context. This may include the further investigation of suspected defects. Where trees are located in neighbouring property, this is usually not applicable.

6.14 **Ret span:** Estimated remaining likely retention span based on species, condition & context. The following longevity bands are used: <10; 10-20; 20-40; >40. The retention span assessment is based on trees in their current context.

6.15 **Category:** BS5837:2012 Category where:

6.15.1 **U = Trees unsuitable for retention**. Trees 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. These trees are shown on the tree plans with dark red centres.

6.15.2 **A = Trees of high quality**. Trees of high quality with an estimated remaining life expectancy of at least 40 years. These trees are shown on the tree plans with green centres.

6.15.3 **B = Trees of moderate quality**. Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. These trees are shown on the tree plans with blue centres.

6.15.4 **C = Trees of low quality.** Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. These trees are shown on the tree plans with grey centres.

6.15.5 Trees of notable quality are graded as Category A or Category B. These trees are divided further into sub-categories. Sub-category 1 is allocated where it has been assessed that the tree has mainly arboricultural qualities. Sub-category 2 is allocated where it is assessed that the tree has mainly landscape qualities. Sub-category 3 is allocated where it is assessed that the tree has mainly cultural qualities, including conservation.

6.15.6 Trees may be allocated more than one sub-category. All sub-categories carry equal weight, with for example an A3 tree being of the same importance and priority as an A1 tree.

6.15.7 I do not allocate sub-categories to Category C trees.

Patrick Stileman

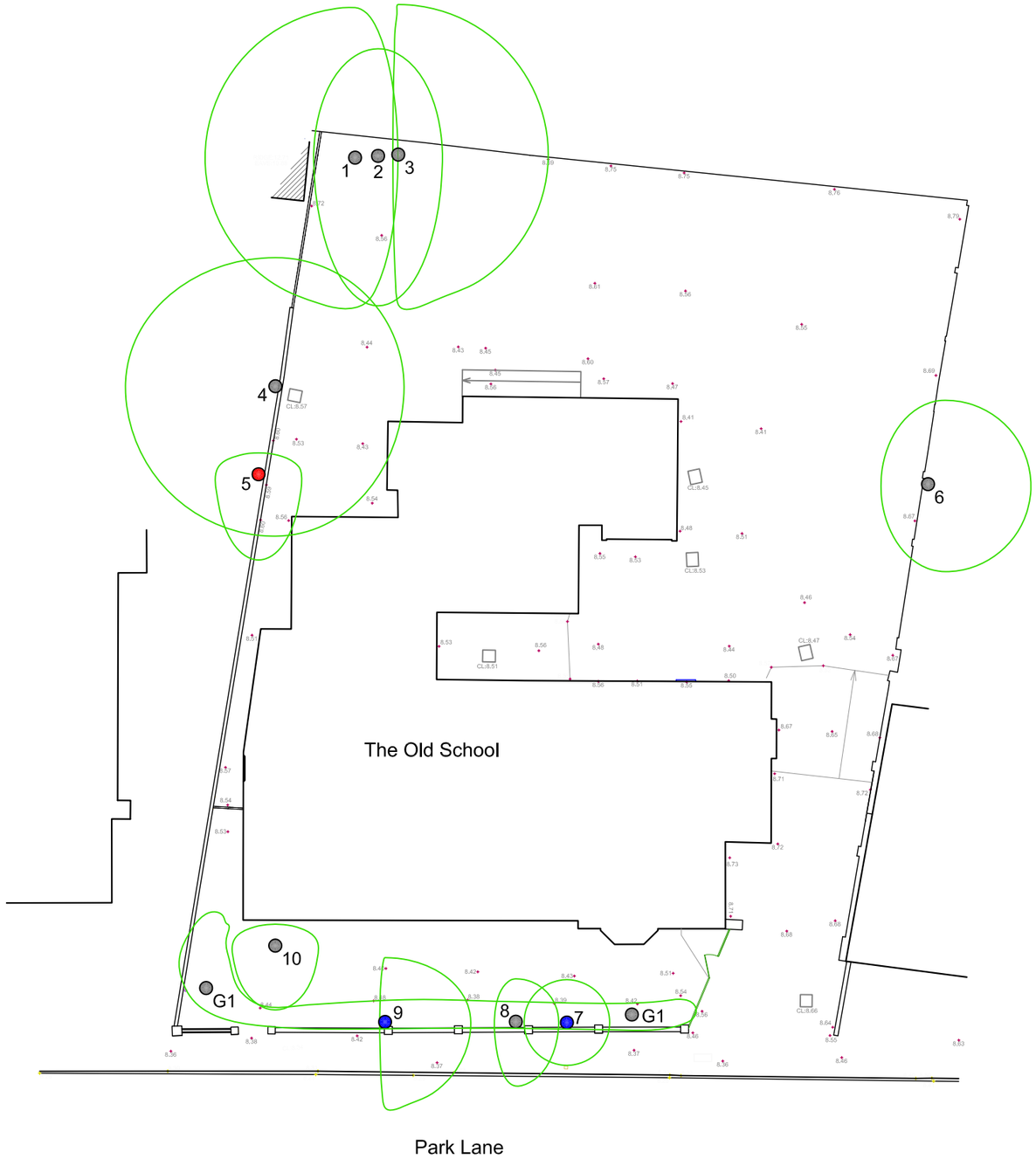
PATRICK STILEMAN BSc(Hons), MICFor, Dip.Arb(RFS), M.Arbor.A
Chartered Arboriculturist. Arboricultural Association Registered Consultant

Director Patrick Stileman Ltd

THE OLD SCHOOL RICHMOND: TREE SURVEY DATA

Tree / Group reference	Species	Ht. (m)	Crown Spread (m)				Crown base (m)	Stem Count	Stem Dia. (mm)					RPA Rad. (m)	RPA Area (m2)	Life Stage Y-SM-EM-M-OM	Phys. Condition G-F-P-D	Condition and observations	Preliminary management recommendations	Ret. Span <10, 10+ 20+, >40	Grade U-A-B-C
			N	S	W	E			1 / mean	2	3	4	5								
1	False acacia	14	7	7	7	2	3m W	1	290					3.48	38	EM	F	Grown as companion with Trees 2 and 3 resulting in pronounced crown asymmetry. Stem leans to south-west with bark damage and loss on upper surface to 1 metre. Relatively low vitality. Base 0.5 metres from old boundary wall.	No action required at time of survey	10+	C
2	False acacia	14	5	7	3	3	2m S	3	440	280	120			6.43	130	EM	F	3 stems from ground level fomring reasonably prominent group with Trees 1 and 3. Base of principal stem 0.2 metres from old boundary wall. Secondary stem on east side has pronounced bark loss on upper surface from ground level to 2 metres above ground level. Relatively short retention span overall.	No action required at time of survey	10+	C
3	False acacia	13	7	7	0	7	1m W	1	390					4.68	69	EM	F	Base of tree 0.1 metre from old boundary wall. Component of reasonably prominent group with Trees 1 and 2. Short realistic retention span given postion relative to wall.	No action required at time of survey	10+	C
4	Sycamore	15	6	7	7	6	1.5m E	2	*400*	*250*				5.67	101	EM	F	Located off-site in adjacent property. Principal stem is pressing against boundary wall with narrow vertical crack developing adjacent. Prominent tree with moderate amenity value, but long-term retention appears limited by position. Six low slender limbs on east side could defensibly be removed to lift crown base overhanging site to approximately 5 metres.	No action required at time of survey	10+	C
5	Elder	5	1	4	2	2	2m W	1	*300*					3.60	41	M	P	Located off-site in adjacent property. Very low vitality - approximately 70% dead.	Remove for reasons of sound arboricultural management	<10	U
6	Balsam poplar	13	4	4	2	5	3m W	2	*400*	*300*				6.00	113	EM	F	Re-grown from recent excessively heavy crown reduction. Prominent tree but will require future management if retained. Base of tree approximately 0.2 metres from wall. Retention span limited.	No action required at time of survey	10+	C
7	Incense cedar	15	2	2	2	2	5m N	1	410					4.92	76	M	F	Slender, columnar form. Prominent on road frontage. High crown base. No defects seen of apparent structural significance.	No action required at time of survey	20+	B2
8	Incense cedar	11	2	3	1	2	4m S	1	*300*					3.60	41	M	P	Slender form - relatively low vitality with considerable die-back on west side. Rather scrappy tree.	Consider replacing with new tree of same species	10+	C

Tree / Group number reference	Species	Ht. (m)	Crown Spread (m)				Crown base (m)	Stem Count	Stem Dia. (mm)					RPA Rad. (m)	RPA Area (m2)	Life Stage Y-SM-EM-M-OM	Phys. Condition G-F-P-D	Condition and observations	Preliminary management recommendations	Ret. Span <10, 10+ 20+, >40	Grade U-A-B-C
			N	S	W	E			1 / mean	2	3	4	5								
9	Incense cedar	16	3	4	0	4	3m N	1	*500*					6.00	113	M	F	Slender, columnar form. Prominent on road frontage. High crown base. No defects seen of apparent structural significance.	No action required at time of survey	20+	B2
10	Buddleia	5	1	3	2	2	2m E	10	*50*					1.90	11	M	F	Growing against building. Shrub or relatively low significance.	No action required at time of survey	10+	C
G1	Privet, viburnum, elder	;2-3	1	1	1	1	0m N	3	50	50	50			1.04	3	M	F	Clipped shrubs with some screening function.	No action required at time of survey	20+	C



TREE SURVEY PLAN

SITE ADDRESS
The Old School, Park Lane, Richmond, TW9 2RA

CLIENT
Renworth Homes (Southern) Ltd

JOB REF
DS17051201

DRAWING NO
DS17051201.01

DATE
02/06/2012

Patrick Stileman Ltd
9 Chestnut Drive, Berkhamsted, Herts,
HP4 2JL 01442 866112

N

KEY

Tree canopy spread

BS 5837 Category key

- Category U tree
- Category A tree
- Category B tree
- Category C tree

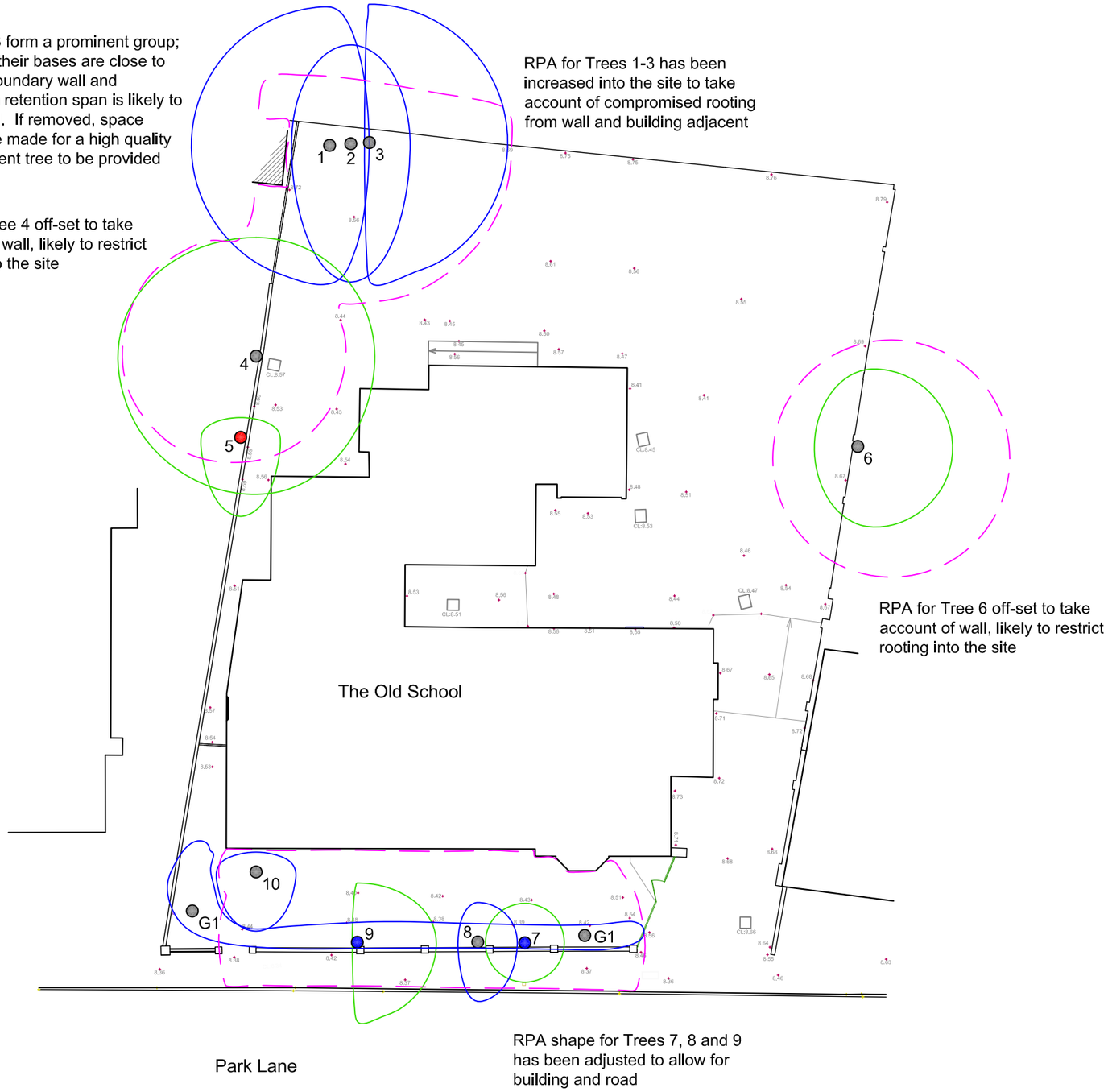
SCALE
1:250 @ A3

NOTE:

Stem diameters are not drawn to scale. See schedule for dimensions

This drawing is based on the topographic survey supplied to us by the client. We have taken the position of the trees included in the survey to be accurate. Tree 6 was excluded from the topo survey and its position shown on this plan is indicative only. The shape of tree groups has been estimated, based on on the extent of foliage shown on the topographic survey

This drawing must be viewed in colour



TREE CONSTRAINTS PLAN

SITE ADDRESS
The Old School, Park Lane, Richmond, TW9 2RA

CLIENT
Renworth Homes (Southern) Ltd

JOB REF
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DRAWING NO
DS17051201.02

DATE
02/06/2012

Patrick Stileman Ltd
9 Chestnut Drive, Berkhamsted, Herts,
HP4 2JL 01442 866112

N

KEY

Tree / tree group with high retention priority which should initially be regarded as a constraint

Tree / tree group with lower retention priority which could defensibly be removed in order to facilitate development

Tree / tree group which should be removed for reasons of sound arboricultural management

Root Protection Area (RPA)

BS 5837 Category key

- Category U tree
- Category A tree
- Category B tree
- Category C tree

SCALE
1:250 @ A3

NOTE:

Stem diameters are not drawn to scale. See schedule for dimensions

This drawing is based on the topographic survey supplied to us by the client. We have taken the position of the trees included in the survey to be accurate. Tree 6 was excluded from the topo survey and its position shown on this plan is indicative only. The shape of tree groups has been estimated, based on on the extent of foliage shown on the topographic survey

This drawing must be viewed in colour

APPENDIX 1

Qualifications and experience of Patrick Stileman BSc(Hons), MICFor, Dip.Arb(RFS), M.Arbor.A

I am Patrick Stileman, director of Patrick Stileman Ltd Arboriculltural Consultancy.

My qualifications in arboriculture are as follows:

National Certificate in Arboriculture *Nch(arb)*

The Arboricultural Associations Technicians Certificate *Tech.Cert (Arbor.A)*

The Royal Forestry Society's Professional Diploma in Arboriculture *Dip.Arb(RFS)*

In addition to the qualifications listed above which are specific to the field of arboriculture, I also hold an honours degree in Environmental Science *BSc(Hons).*

I hold chartered status, being a Chartered Arboriculturist and professional member of the Institute of Chartered Foresters *MICFor.*

I am a registered consultant with the Arboricultural Association.

I am a trained expert witness, and hold the Cardiff University Bond Solon Expert Witness Certificate.

I am a member of the Royal Forestry Society.

I have been working within the arboricultural industry since 1994 and have been working as a consultant since 2001. I am frequently instructed by professionals to provide advice and assistance relating to trees within the planning process; I have a wide client base in this field including developers, architects, planning consultants, and Local Planning Authorities. I am experienced with providing arboricultural input in planning appeals as written representation, informal hearing and public local inquiry.

I am regularly instructed to assist with tree risk assessments, and to provide guidance relating to tree safety. Past clients for this work include Local Authorities, schools, residents associations, large organisations including zoos and estates, and private individuals.

I provide advice in relation to alleged tree-related damage to buildings. Clients for this work are typically domestic homeowners, but have also included local authorities. Other work that I undertake involves the provision of tree planting schemes; and advice relating to the general management of trees.

I have worked as an arboricultural expert witness for public and private sector clients.

Prior to running my current consulting practice, I was a partner in an arboricultural contracting business in which I was involved with the practical aspect of organising, and execution of contract tree work.