Arboricultural Survey

13A Crossfield Road
London
NW3 4NS

22nd March 2018

PJC ref: 4815/18-01 Rev -

This report has been prepared by

PJC Consultancy Ltd

on behalf of

Ms J Ladwig

Prepared by	**Peter Davies FdSc Arboriculture M.Arbor.A** Peter has a Foundation Degree in Arboriculture from the University of Brighton and is a professional member of the Arboricultural Association. He has over ten years experience in the arboricultural industry, originally working as a groundsman and feller, and progressing into consultancy. He is a Lantra accredited professional tree inspector.
Checked by	**Nick Betts HND For M.Arbor.A** Nick has attained an HND in forestry management and is a professional member of both the Arboricultural Association and the Consulting Arborists Society. He has worked in the arboricultural and forestry industries for 17 years. He started his career as a forestry worker before qualifying as a tree surgeon, working in both the private and commercial sectors. He has been a practising consultant since 2004. He is a Lantra accredited professional tree inspector.

Sussex office:
Chapter House, Priesthawes Farm
Hailsham Road, Polegate
East Sussex, BN26 6QU
Tel: 01323 832120

E: contact@pjcconsultancy.com

Kent office:
Unit 1, Hanover Mill,
Mersham, Ashford,
Kent, TN25 6NU
Tel: 01233 225365

W: www.pjcconsultancy.com

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

CONTENTS

1 INTRODUCTION

1.1 **Instruction:** PJC Consultancy has been instructed by Ms J Ladwig to provide an initial arboricultural survey of 13A Crossfield Road in Camden. The survey is to be undertaken in accordance with BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.2 **Survey objectives:** This survey has been undertaken with the following objectives:

- To record a schedule of significant trees (dimensions and locations) situated at the prospective development site.
- To assess the quality and value of the existing tree stock in terms of arboricultural, landscape, historical/conservation, or public amenity value.
- To provide information relating to planning constraints that may restrict works to trees at the site.
- To provide an assessment of the material constraints posed by the existing tree stock on potential future developments at the site.
- To aid the design process, ensuring prospective developments integrate appropriately with the existing tree stock, to maximise the potential of the proposed development site.

1.3 **Scope of this report:** This report is concerned with all significant trees and arboricultural features located within the site boundary. Additionally, trees located around the curtilage of the site have also been surveyed when they are considered likely to have the potential to impact on the development (in relation to root and crown protection or foundation design).

1.4 **Contents of report:** This report includes the following:

- A summary of the existing tree stock and notable arboricultural features.
- Tree Constraints Plan in accordance with BS5837: 2012.
- Tree Survey Schedule containing the relevant measurements and information for each tree or tree group as required in BS5837: 2012.

1.5 **Documents and information provided:** The following documents were used to aid the preparation of this report:

- Drawing ref. 10591/TP/01 – Existing Plan, Block Plan & Location Plan

2 SITE VISIT AND SURVEY METHODOLOGY

2.1 **Site visit:** A site visit was carried out on 19th March 2018. The weather conditions at the time were clear and dry with light snow cover on the ground. The visibility was adequate for visual tree inspection from ground level.

2.2 **Tree survey information:** The following information was recorded in the Tree Survey Schedule for each individual tree (average dimensions are recorded for groups):

- Tree reference number.
- Species (common and scientific name).
- Overall tree height (m).
- Stem diameter (mm) per stem or average diameter for multi-stemmed trees with six or more stems.
- Branch spread (m) measured to the four cardinal points.
- Existing height (m) above ground level of lowest significant branch and direction of growth (for individual trees only).
- Existing height (m) above ground level of canopy.
- Age class (young, semi mature, early mature, mature, over mature or veteran).
- Physiological condition (good, fair, poor).
- Structural condition (good, fair, poor).
- Comments (general description of tree(s) including any notable features).
- Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the prospective development).
- Tree categorisation (see below).
- Root protection area (m^2).
- Root protection radius (m).

2.3 **Tree categorisation:** The condition and value of each tree was evaluated based on the current land use. Each tree or tree group has been awarded either category A, B, C or U and a sub category of either 1,2 or 3 or a combination of the sub categories.

2.4 Tree categorisation summary:

- A – Trees of good condition and high arboricultural, landscape or conservation value. Must have a potential life span in excess of forty years.
- B – Trees of moderate condition, with minor defects or sub-optimal form but are still of modest arboricultural, landscape or conservation value. Must have a potential life span in excess of twenty years.
- C – Unremarkable trees of poor condition or form with limited arboricultural, landscape or conservation value, or trees with a stem diameter under 150mm. Must have a potential life span in excess of ten years.
- U – Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. These trees do not need to be removed if they are not dangerous and do not conflict with the proposed development, but should not be considered a constraint to development.

2.5 Tree sub categorisation summary:

- 1 – Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
- 2 – Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy. Also trees present in groups that attain higher collective rating that they would as individuals.
- 3 – Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance or veteran trees.

2.6 Each tree can only be categorised as A, B or C but may comply with more than one sub category. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

2.7 **Root protection areas:** A root protection area represents the minimum amount of root growth required to support a tree. It is a standardised calculation based on the stem diameter(s) measured at 1.5m and is not necessarily representative of the actual or total rooting area. The formulas used to calculate root protection areas are shown below:

Table 1: Root protection area formulas

For single stemmed trees

$$\text{Root protection area } (m^2) = \frac{(\text{stem diameter (mm)} \times 12)^2 \times \pi}{1000}$$

For trees with two to five stems, a combined stem diameter is calculated as follows:

$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \ldots + (\text{stem diameter 5})^2}$$

For trees with more than five stems, the combined stem diameter is calculated as follows:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

2.8 The root protection areas are plotted onto the Tree Constraints Plan in Appendix 1, and recorded in the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have represented as a polygon of equivalent area.

2.9 The proposed layout should avoid level changes or the placement of new buildings and areas of hard surfacing within the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within the root protection areas however further input from an arboriculturalist should be sought regarding their site-specific viability before these methods are relied upon.

2.10 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally as well as the absorption of moisture and nutrients from the soil. They also act as storage and transport for water and nutrients.

2.11 Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above the growing medium, (i.e. from porous to non-porous), can alter the resources available to the tree, which in turn can lead to its decline.

2.12 The majority of root growth is usually found within the top 600mm-1000mm of soil. As such, even shallow disturbance within root protection areas can potentially have a significant impact on the trees.

2.13 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. Any construction works within a root protection area required for the proposed layout must be justifiable within the arboricultural impact assessment.

2.14 **Limitations of survey:** The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible.

2.15 This survey represents a preliminary overview of the condition and value trees at the site. It is not a detailed assessment of any individual tree and although preliminary management recommendations are included, this report will not be sufficient to be used as a detailed condition and safety survey.

2.16 The information and measurements in this report are representative of the date of the site visit. The tree survey data will need to be updated to reflect tree growth and changes in the condition of trees after prolonged periods.

2.17 No topographical survey with measured tree positions was provided to produce this report. The tree positions on the Tree Constraints Plan were approximately measured during the initial tree survey.

3 SITE DETAILS AND SURVEY FINDINGS

3.1 **Site location:** The site is situated adjacent to the junction between Crossfield Road and Adamson Road in the London Borough of Camden. It has a central OS national grid reference of TQ268845. The surrounding land use is comprised of urban residential development in all directions, with Crossfield Road fronting the eastern site boundary. The location of the site within its environs is shown in figure 1.

Figure 1: Location of Site and Environs

3.2 **Site layout:** The site comprises the ground floor and rear garden of a block of flats. The property is accessed via a paved side path, with a gate leading into the rear garden. The rear garden has a patio immediately adjacent to the rear of the building, a central lawn and an area of raised decking at the west end. There are small shrubs in the garden with stem diameters too small to warrant inclusion in this report and a single tree in the western corner. Further trees are situated outside the site boundary.

3.3 **Appraisal of tree stock:** The largest tree surveyed for this report is T5, which is a mature false acacia situated within the front garden of 37 Adamson Road. This large specimen has been heavily reduced in the past to avoid conflict with the surrounding buildings, but is of good amenity value for the surrounding roads. It has been awarded category B2 for its landscape value. The root protection area of T5 encroaches the site boundary. Although there is a low brick wall on the site boundary and what appears to be impermeable paving within the site, given the size of the tree it is expected that tree roots will still extend into the site so the root protection area has only been amended to exclude the surrounding buildings.

3.4 The only tree located within the site boundary is T3, which is a standing dead tree located in a small brick planter at the end of the garden. The tree is completely smothered by ivy with no visible crown or bark, therefore identification of the species is not feasible. Although the tree is dead and removal is recommended, this does not need to be carried out urgently as the tree is not large enough to pose an imminent safety concern.

3.5 Two multi-stemmed sycamores are located within the rear garden of 37 Adamson Road, close to the site boundary. These trees are visible from a number of properties and contribute visual amenity to the local landscape. The root protection areas of both trees encroach the site. Although there is an approximately 2m brick wall on boundary between the trees and the site, given the size and proximity of the trees this is not considered likely to be sufficient to prevent roots encroaching the site so the root protection areas have not been amended on the Tree Constraints Plan.

3.6 Tree T4 is a relatively small magnolia located just outside the western garden boundary. There is a small retaining wall on this boundary, which given the size of T4 is expected to act as a partial or total barrier to roots entering the site. The root protection area of T4 has therefore been amended to exclude the site, although the crown still encroaches the site boundary. T4 has been awarded category C1 is it has a stem diameter under 150mm.

3.7 Measurements and further information for each tree can be viewed in the Tree Survey Schedule in Appendix 2.

3.8 **Tree categorisation summary:** A total of five trees were surveyed and recorded in the Tree Survey Schedule.

Table 2: Tree categorisation summary

Categorisation	Individual tree
A	-
B	3
C	1
U	1
Total	5

3.9 **Statutory tree protection:** Camden Borough Council Planning Department has been contacted to establish restrictions to tree works at the site. Due to the timing of this report a response has not yet been received to confirm the presence/absence of tree preservation orders. The site is however located within the Belsize Park Conservation Area.

3.10 Any persons proposing to undertake tree works must check the status of the trees with the local authority, and gain the necessary consent or provide the statutory notification period before the works are undertaken. Financial penalties and/or criminal proceedings can result if tree works are carried out on a protected tree without consent. The entirety of the tree is protected, both above and below ground.

4 RECOMMENATIONS

4.1 **Arboricultural input to planning application:** To comply with BS5837: 2012, an arboricultural impact assessment should be produced when the proposed layout has been fixed. The arboricultural impact assessment should include a schedule of trees to be retained or removed as well as access facilitation pruning required to enable the construction works. It should also evaluate the likely effects of the construction works on retained trees including post development pressures and provide recommendations on mitigation measures to be implemented.

4.2 It is recommended that input is sought from the project arboriculturalist into the proposed layout before it is fixed. This will help ensure the proposed layout integrates well with the retained tree stock, and will allow potential areas of conflict that may not be identified by non-arboricultural professionals to be rectified whilst the layout is being developed.

4.3 The arboricultural impact assessment should be accompanied by an arboricultural method statement and a dimensioned Tree Protection Plan to show how retained trees will be protected whilst the development is constructed.

4.4 **Arboricultural considerations for proposed layout:** The proposed layout should take into account the following considerations related to trees:

- The proposed layout should seek to retain higher quality trees, particularly those that cannot easily be replaced. Where tree removal is necessary to facilitate the wider regeneration benefits associated with development, a tree replacement strategy could be implemented to mitigate tree loss. A net loss in tree cover within a development site will not be looked on favourably when determining a planning application.
- The proposed layout should take into account the root protection areas of retained trees. These should be left free of construction activities including hard landscaping unless the project arboriculturalist confirms engineered solutions or sympathetic construction methodology will be a viable option to mitigate the encroachment.
- The proposed layout should take into account the shade cast by trees. Over-shading of gardens and buildings (notably habitable rooms) can result in future pressures to prune or remove additional trees post development and will be a material consideration for the local authority when determining a planning application.
- The proposed layout should also take into account other common potenital nuisances resulting from trees including nuisance caused by leaf/fruit drop or honeydew drip (particularly onto footpaths, parking areas or roof guttering) and an over-bearing presence of large trees.
- Allowance should be made for future canopy growth of both existing and newly planted trees. Trees growing in areas of limited space may require regular future pruning works. The suitability of different species for regular crown reductions, the affect on their amenity value and the cost of future tree works (as well as who would be responsible for undertaking the works) should be considered.

4.5 If further tree planting does occur within the development site, consideration should be given to species selection (in relation to form and potential size) and planting locations to ensure their successful integration into the new development. Recommendations for mitigation tree planting may be included in the arboricultural impact assessment, or a more thorough landscaping strategy may be provided by a landscape designer/architect.

4.6 The final design should show service locations and their routing. New utilities should be located outside of the trees root protection areas where they are underground and outside of the anticipated area of mature crown spread where above ground. If this is not possible, recommendations outlined in NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' should be followed. Advice should also be sought from the project arboriculturalist.

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

Contact details

Sussex office:
Chapter House
Priesthawes Farm
Hailsham Road
Polegate
East Sussex
BN26 6QU

Tel: 01323 832120

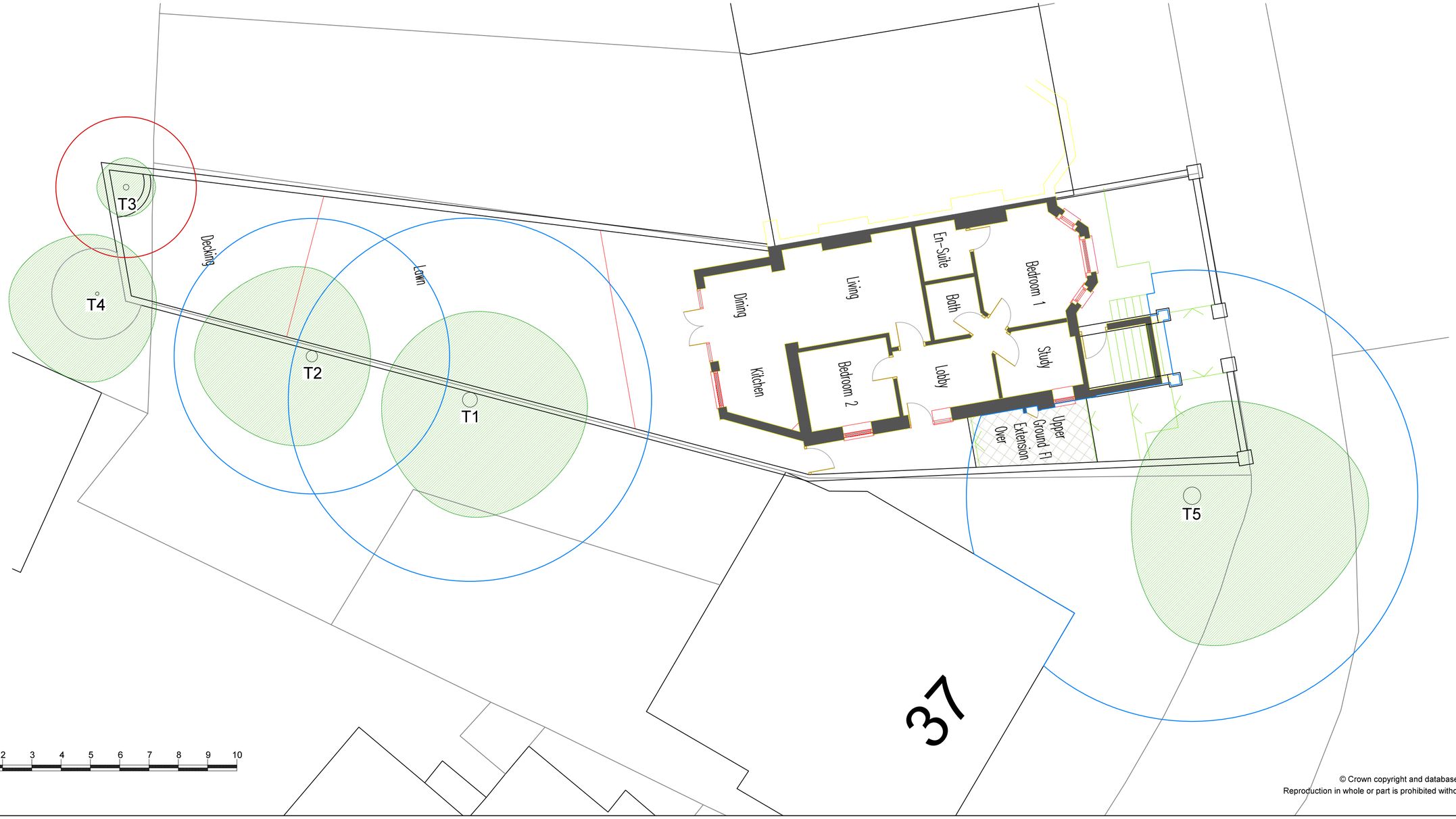
Author: Peter Davies

Date: 22nd March 2018

E-mail: pete@pjcconsultancy.com

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

APPENDIX 1
Tree Constraints Plan



* Tree categorised in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction - Recommendations*'.

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. PJC/4815/18-01 contains further information for each tree.

This drawing should be viewed in colour.

All tree positions on this drawing were approximately measured during the initial tree survey but should be checked on site.

Key:

- RPA for CAT B* tree
- RPA for CAT C* tree
- RPA for CAT U* tree
- Tree canopy

Drawing no: PJC/4815/18/A **Rev:** - **Sheet number:** 1 of 1

Client and site:
Ms J Ladwig

13A Crossfield Road
London
NW3 4NS

Drawing title: Tree Constraints Plan

Date drawn: 22/03/2018

Scale: 1:100 at A2

Drawn by: PD **Checked by:** NB

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

PJC Consultancy
Chapter House, Priesthawes Farm, Hailsham Road, Polegate, East Sussex, BN26 6QU,

t: 01323 832120
e: contact@pjcconsultancy.com
w: www.pjcconsultancy.com

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

APPENDIX 2
Tree Survey Schedule

Client: Ms J Ladwig
Site: 13A Crossfield Road
Survey date: 19/03/2018
Surveyor: Peter Davies

Tree Survey Schedule

Tree ref.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m^2)	Root Protection Radius (m)
T1	Sycamore (Acer pseudoplatanus)	15	150, 300, 300, 250 est	N: 3 E: 4 S: 4 W: 3	Crown: 4 north Branch: 4 north	Mature	Good	Good	Third party tree only viewed from site. Multi-stemmed. Crown lifted over site.	No action required on date of survey.	B1/2	119.9	6.2
T2	Sycamore (Acer pseudoplatanus)	12	300, 250 est	N: 3 E: 2 S: 3 W: 4	Crown: 4 west Branch: 2 west	Early mature	Good	Fair	Third party tree only viewed from site. Suppressed form. Crown reduced. Multi-stemmed.	No action required on date of survey.	B2	69.0	4.7
T3	Unknown	6	200 est	N: 1 E: 1 S: 1 W: 1	Crown: N/A Branch: 2 east	Dead	Poor	Poor	Small standing dead tree smothered by ivy.	Fell to ground level (not urgent as small tree does not pose imminent safety concern).	U	18.1	2.4
T4	Magnolia (Magnolia grandiflora)	5	120 est	N: 2 E: 2 S: 3 W: 3	Crown: 2 average Branch: 2 average	Semi mature	Good	Good	Small third party tree only viewed from site. Root growth not expected to extend into site due to retaining wall.	No action required on date of survey.	C1	6.5	1.4
T5	False acacia (Robinia pseudoacacia)	17	600 est	N: 3 E: 6 S: 5 W: 2	Crown: 2 average Branch: 5 west	Mature	Good	Fair	Third party tree only viewed from site and road. Crown historically heavily reduced. Roots expected to be constrained by buildings	No action required on date of survey.	B2	162.9	7.2 (amended on Tree Constraints Plan)

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

APPENDIX 3
Cascade Chart for Tree Quality Assessment

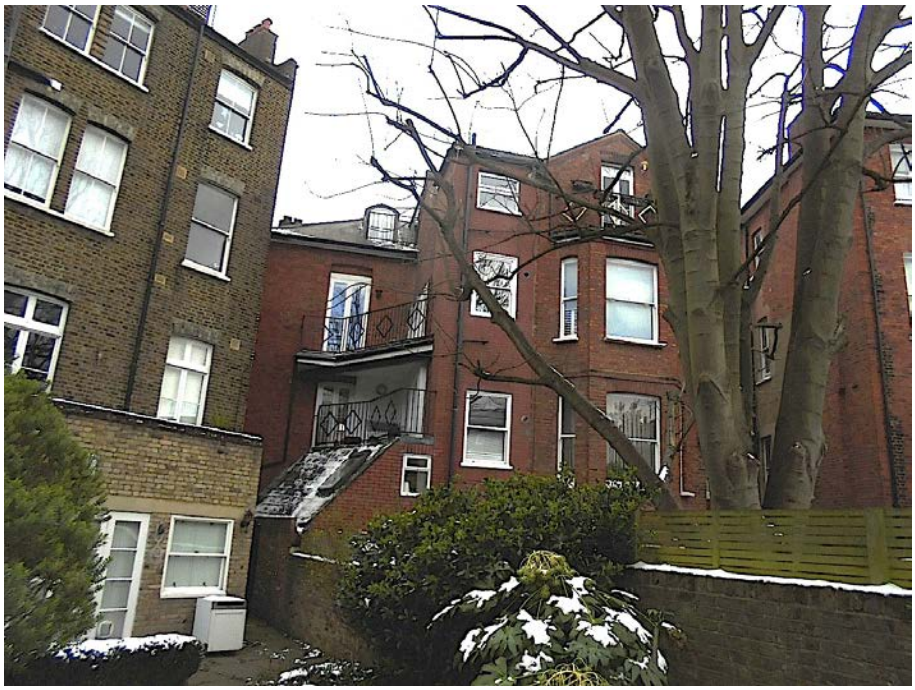
PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U **Those in such a condition that they cannot realistically be retained as living trees in the context of their 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, including those that will become unviable after the removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. Note Category U trees can have existing or potential conservation value which it might be desirable to preserve			Red
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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 conservation, historical, commemorative or other value (e.g. veteran trees or wood--pasture).	Green
Category B **Trees of moderate quality with an estimated remaining life expectancy of 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 remedial 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 value.	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 150mm.**	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 value.	Grey

PJC Consultancy
Arboricultural, Ecological & Landscape Consultancy

APPENDIX 4
Photographs



Photograph 1 – Tree T1

Photograph 2 – Trees T1 and T2

Photograph 3 – Tree T5

Photograph 4 – Hard standing within root protection area of T5

Photograph 5 – Tree T3

Photograph 6 – Tree T4

Photograph 7 – Retaining wall adjacent to T4

Photograph 8 – Garden lawn area

Photograph 9 – Rear patio area

Photograph 10 – Side path