BS5837 Arboricultural Impact Assessment

91 Regent's Park Road, London, NW1 8UT

Client: **Alexander Martin Architects**

Job Reference: 02960R

Consultant: Keiron Hart (BSc Hons, C.Env, F.Arbor.A, MICFor, MEWI)

Tamla Trees
consulting arborists

October 2018

Contents

1. Executive Summary

1.1 Tamla Trees ltd has been appointed on by Alexander Martin Architects to provide advice on the arboricultural issues relating to the proposed development which can be summarised as provision of 1st floor living accommodation above existing single storey (rear) section and internal alterations. We surveyed the site on 25th September 2018. The survey accorded with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".

1.2 The predominant and only amenity trees are T1 & T2 (Silver Birch) located within the adjacent public highway (Erskine Road). No trees will be removed to facilitate the proposal and no construction works are proposed within the Root Protection Area (RPA) of either tree.

1.3 The proposal may require internal pilling of footings below the existing single storey section (to be confirmed by engineers) but such works will be internal to the structure with access away from T1 (Silver Birch). As a result there should be no discernible impact on the retained tree.

1.4 The new 1st floor element will be close to the canopy of T1 (Silver Birch) but the branch and tree size is such that any localised pruning will be limited to small branches and a longer term relationship of repeat pruning management can be established without the need to initiate large pruning wounds (i.e. minor tipping back is all that may be required and this can be repeated at appropriate intervals to maintain the new relationship).

1.5 The main issues with the potential to impact on the retained trees are: **Potential internal underpinning within existing basement > Site access> Tipping back/ pruning management of T1.**

1.6 The site is located within the Primrose Hill Conservation Area but we have not been advised of the presence of any Tree Preservation Order (TPO)

1.7 Subject to the working practices within this report being adhered to there should be no discernible negative impact to the retained trees.

1.8 This report is based on drawing reference number (and associated plans/ sections): 91RPR - PR200 - Proposed Elevations - Rev C

2. Statutory Protection

2.1 At the time of writing Camden Council website confirms:

Conservation Area Status	
Is the site located within a Conservation Area?	Yes Primrose Hill
Notes: (i) All trees larger than 7.5cm diameter at 1.5m above ground level are subject to regulations within a Conservation Area. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. A notification is required in many circumstances.	
Tree Preservation Order Status	
Are inspected trees subject to a TPO?	No
Type of TPO	~~**Area**~~
	~~**Individual**~~
	~~**Group**~~
	~~**Woodland**~~
TPO Reference	-
Date TPO Made	-
Notes: (i) The type and details of any TPO determine which trees are 'protected'. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. An application may be required before undertaking works. (ii) We have not been advised that T1 & T2 are affected by a TPO but this should be confirmed by Camden Borough Council if required.	

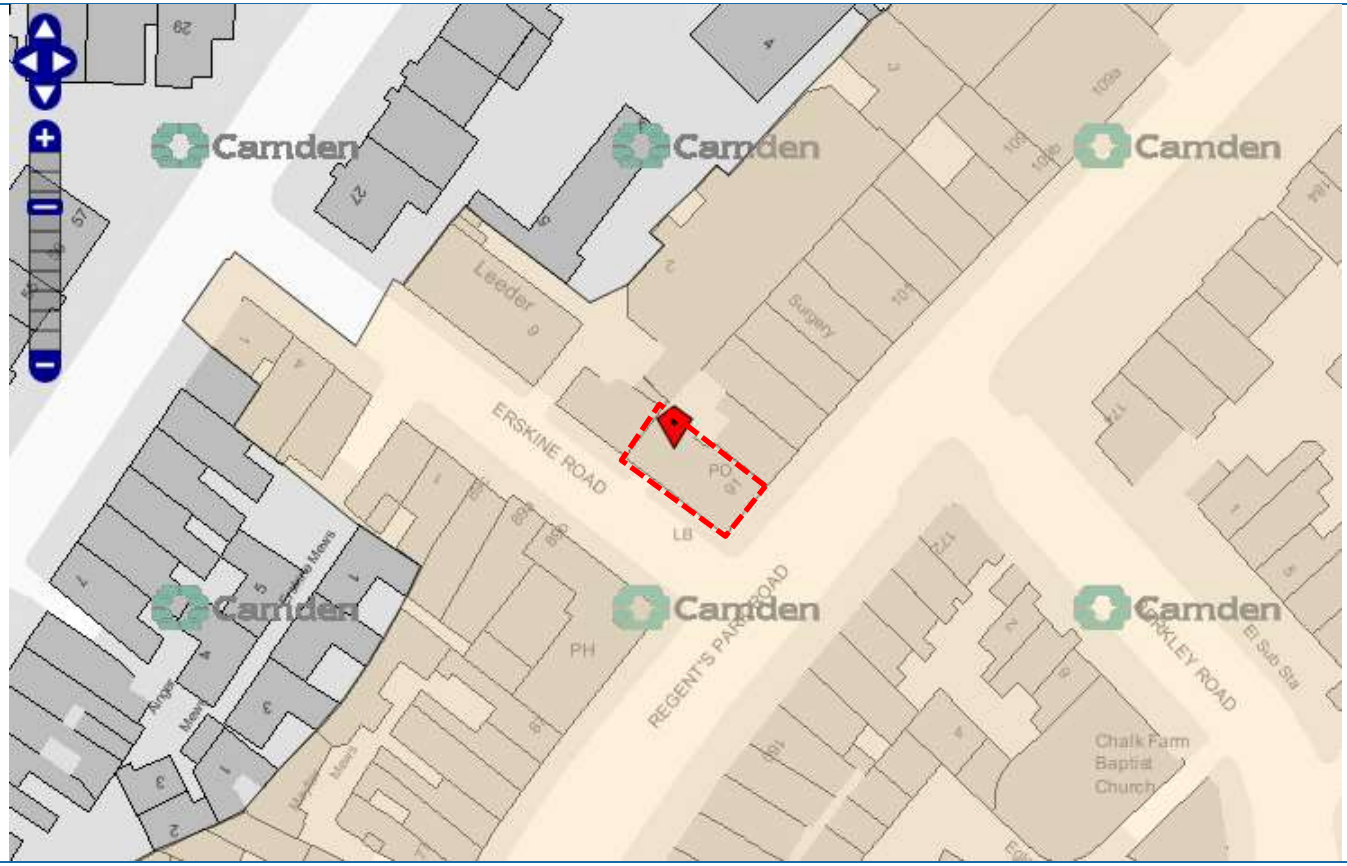


Fig 1 – The site relative to Primrose Hill Conservation Area

3. Terms of Reference

3.1 BS5837:2012 'Trees in relation to design, demolition and construction – recommendations'

3.2 BS3998:2010 'Tree work – recommendations'

3.3 NJUG 4 – National Joint Utilities Group "Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Volume 4, issue 2. London: NJUG 2007" To include Operatives Hand-out Guidance

3.4 BGS Open Source Soil Data http://www.bgs.ac.uk/nercsoilportal/maps.html

4. The Trees

4.1 The trees can be summarised as follows:

BS 5837 Cat	A	B	C	U
Specific Trees	-	T2*	T1*	-
Total Number	None	1 individual	1 individual	None

*3rd party trees

4.2 These tree locations and a summary of their visual contributions can be summarized as follows:

BS 5837 Cat	A	B	C
Erskine Road/ Regents Park Road Private and Public Residential Amenities Providing residential and public amenity	-	T2	T1

4.3 There were no hedges present that qualify for consideration under the 1997 Hedgerow Regulations.

4.4 Please refer to the Tree Constraints Plan for an overview of tree locations relative to buildings/ public highway.

4.5 It is noted that development works are currently being undertaken close to T2. This tree is located away from the proposed works relevant to this report but it is included for completeness.

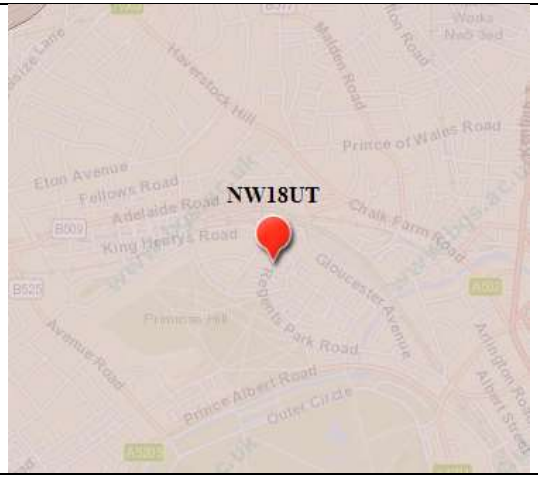
5.0 Arboricultural Impact Assessment

5.1 Site Specific Soils

5.1.1 Soil is an important factor in tree growth and the type of underlying soil can impact on successful integration of new developments.

5.1.2 A free draining sandy soil containing sand/gravel is likely to lead to water being accessible in the upper horizons during the growing season and available at greater depths and trees will generally be forced to explore a larger volume/ depth on such soils. The structure of such soil also makes compression more difficult (by heavy construction plant) and root penetration is easier for the trees. By comparison a clay soil is more easily compressed, particularly when wet and compression can have a greater impact on tree health.

5.1.3 As shown below the site is located within what is defined as clay.



Soil Description
London Clay Formation Clay, Silt And Sand. Sedimentary Bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.

Underlying Soil Material contains Clay	**No**
Soil Type increased rooting depth profile?	**No**
Increased risk of soil compaction due to soil type	**Yes**

5.1.4 All comments regarding soils should be verified with onsite geotechnical investigations and laboratory testing with foundation depth and design undertaken by a structural engineer in accordance with the requirements of NHBC Chapter 4.2.

5.2 Root Protection Area (RPA) Incursions

5.2.1 The following incursions into the RPA's of trees to be retained have been identified:

BS 5837 Cat	A	B	C	Summary
RPA Incursion	-	-	T1	**Underpinning –** At this stage it is not confirmed whether localized underpinning would be required to strengthen the existing single storey section of the building prior to the addition of the proposed first floor. However, any underpinning would be internal to the existing footprint and would likely be the insertion of mini piles or localized mass concrete footings. All works would be located outside the RPA of T1 given their location and as a result no special measures are required. Access for this (and all internal works) would likely be internally to the building keeping tracking of machinery and materials through the RPA of T1 to a minimum.
			T1	**First Floor Works** – As Erskine Road is a quieter road than Regents Park Road it seems likely that there may be some localized deliveries of materials in this location. As a precaution we have shown basal shuttering to the base of T1. This serves to physically protect the lower stem. Areas outside the RPA of this tree are existing hard standing removing the risk of ground compaction in this area.

5.3 Tree Loss

5.3.1 No trees will be removed to facilitate the proposal but minor tipping back of T1 may be required. The branch size affected will be minimal and such works would serve to establish points for future canopy reduction works. In addition the slight step back of the 1st floor addition likely reduces the need to do this work further. The tree is an early-mature example and will not be adversely affected by such works subject to them being carried out by a competent contractor and in accordance with BS5837 (Tree Works).

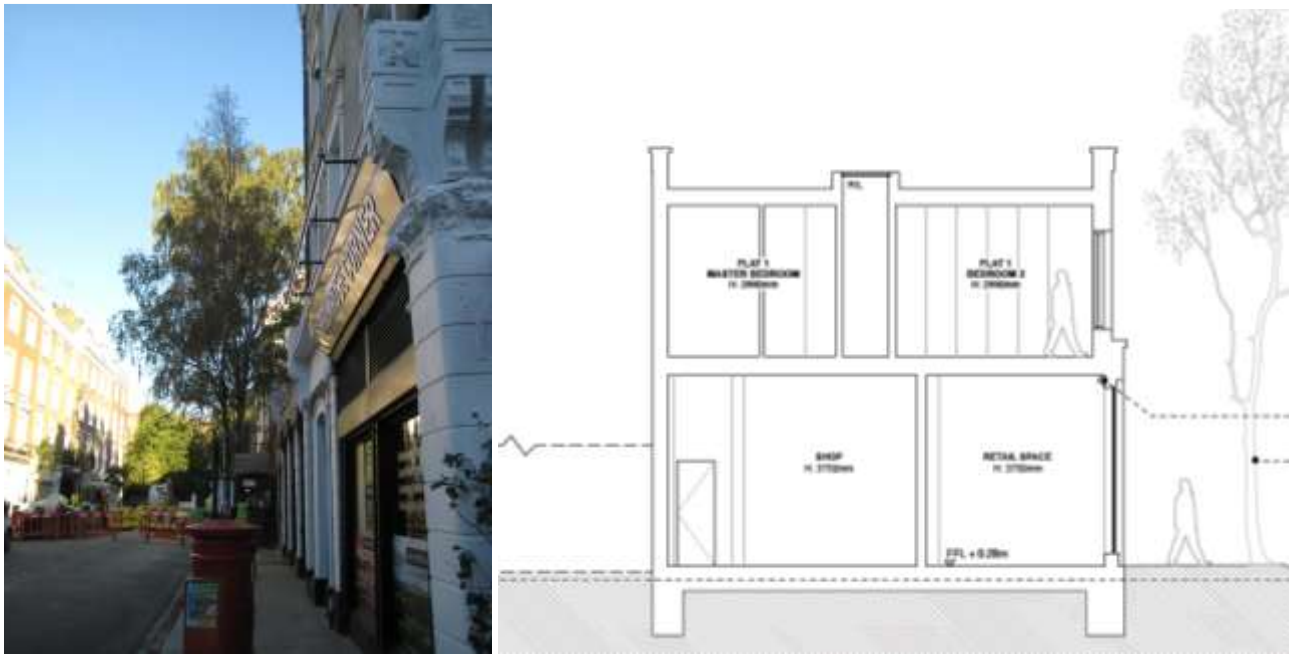


Fig 2 – T1 (left) looking down Erskine Road with section showing slight step back of 1st floor level. Any pruning will be limited to minor canopy branches.

5.3.2 **Birds** - In the event tree works will be completed between 1st March & the 31st July (inclusive) a due diligence check for nesting birds must be completed before work starts in order to comply with the Wildlife & Countryside Act 1981. This check should be recorded in the Site Specific Risk Assessment. If active nests are found work should not take place until the young have fledged.

5.3.3 **Bats** – It should be noted that in England and Wales, the relevant legislation is the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

5.4 Demolition and Foundations

5.4.1 No demolition is proposed but we have been advised that there may be a requirement to strengthen existing foundations by way of localised (internal) underpinning works. Such works would be located outside the RPA of T1 and should therefore have no discernible impact on this tree.

- **Building may require internal underpinning.**
- **All movements over existing hard surface.**
- **Basal shuttering for T1.**
- **Underpinning excavations outside RPA.**

Fig 3 – T1 showing basal shuttering and RPA relative to existing building footprint.

5.4.2 As a precaution T1 will be basally shuttered to remove the risk of lower stem damage during site works:

Tree Protection	
	**Overview** • *Protective fencing for T1 as indicated on Tree Protection Plan.* • *Installed prior to any site works.* • *Retained for duration of all site works.*
Threat level to Retained Trees	**LOW**

5.5 Surfaces near Trees

5.5.1 No new surfaces are proposed and the existing hard surface remains in place for the duration of the works removing the risk of ground compaction.

Fig 4 – T1 showing existing hard surface arrangement which remains unaffected by the works

5.5 Site Service Provision

5.5.1 The proposal draws on existing site services and no trenching is proposed within the RPA of retained trees.

5.6 Ground Level Changes

5.6.1 No ground level changes are advised other than localized internal underpinning detailed elsewhere in this report and located outside the RPA of T1.

5.7 Tree Shading of Proposal

5.7.1 With only a single Silver Birch and an open south/ south westerly orientation no shading issues are envisaged.

5.8 Arboricultural Project Supervision

5.8.1 Most damage to trees on developments sites is caused inadvertently and to ensure continued protection during development a system of site monitoring is normal. We would advise that tree protective fencing is installed prior to any on site activities. Given the low level of tree protection issues on this site no monitoring is proposed. If the local authority wishes to see monitoring then an appropriate planning condition is suggested.

Appendix 1 – BS5837 Survey Key

BS 5837 Cat	Description
A	Those of high quality and value: in such a condition as to be able to make a substantial contribution (> 40 years)
B	Those trees of moderate quality and value: those in such a condition as to make a significant contribution (> 20 years)
C	Those trees of low quality and value: currently in an adequate condition to remain until new planting could be established (> 10 years)
U	Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed regardless of development (< 10 years)

Note: Sub categories are denoted in the tree survey data (A1, B1, C2 etc.). You are referred to BS5837 for further detail if required.

Tree No.	T (tree), G (group), H (hedge), W (woodland) + Ref No.
Species	Common Name
Ht (m)	Measured height in metres
DBH (m)	Diameter at 1.5m above ground level
No of stems	An indication of the trees form @1.5m (1 = single stem, m/s = multi-stemmed)
Branch Spread	In m to cardinal points
Cr Ht Clearance (m)	Overall height of lowest branches from the ground level on side of proposed development
Life Stage	Young, Semi-Mature, Early-Mature, Mature, Over-Mature
General Observations	Observations on the condition of the tree(s)
Tree Work Specification	Proposed tree works in accordance with BS3998
BS Cat	See above
Life Exp	Estimated remaining contribution in years.
RPA Radius(m)	Radius of the trees Root Protection Area measured from the trunk to the edge of the RPA circle in metres

Appendix 2 – BS5837 Survey Data

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T1	Birch (Silver)	0.18	1	12.5	2	2.5	2	2.1	C1	Early-mature	20 to 40	3.2	Established tree with uniform shape. Evidence of drought stress.	Minor tipping back in accordance with BS3998 to provide 1.5m clearance from building as/ if required.	2.2
T2	Birch (Silver)	0.4	1	15	5	5.4	5.6	5.6	B2	Mature	10 to 20	2.6	Larger established tree already boxed in for development works. Limited access to inspect. V union at 4m.	No works	4.8

Appendix 3 – Tree Works Schedule

NOTE: All tree works to be undertaken in accordance with BS 3998:2010 'Tree work - Recommendations'.

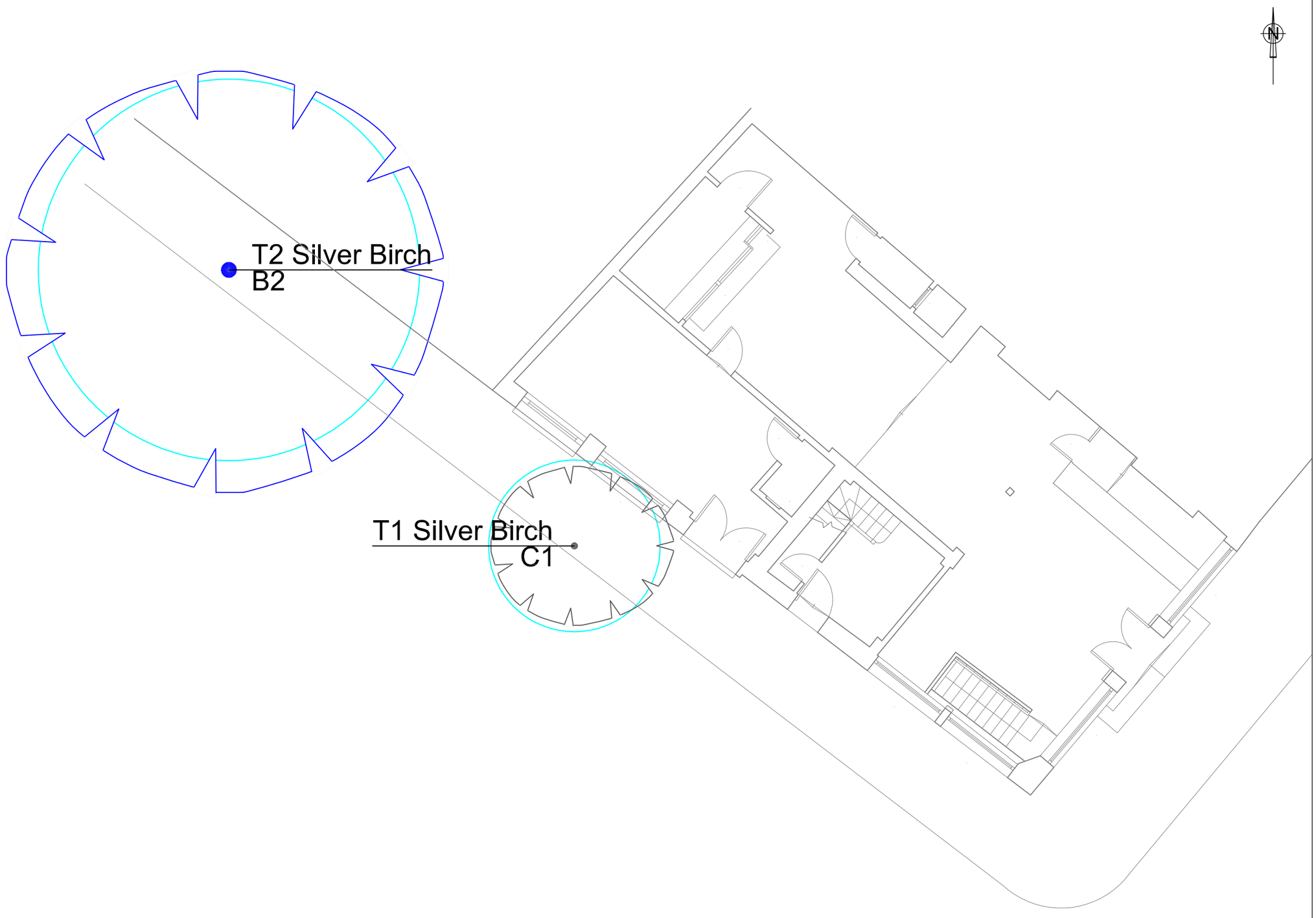
Tree Surgery

Tree No.	Species	Proposed Tree Works	BS Cat
T1	Birch (Silver)	Minor tipping back in accordance with BS3998 to provide 1.5m clearance from building as/ if required	C1

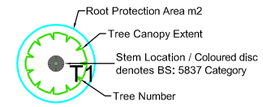
Proposed Removal

Tree No.	Species	Proposed Tree Works	BS Cat

Appendix 4 - Tree Constraints Plan



Tree Survey Drawing Key



See Tamla Trees, Tree Survey for Individual Tree Details

KEY

Please refer to Tamla Trees report for details

- Category A - Trees of high quality
- Category B - moderate quality
- Category C - low quality
- Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

NOTE Tree positions indicatively mapped due to lack of detailed topographical plan

REV AMENDMENTS DRAWN DATE AUTH'D

PROJECT
91 Regent's Park Road,
London,
NW1 8UT

CLIENT
Alexander Martin Architects

TITLE
Tree Constraint Plan (TCP)

Job	Scale	DRG NO	Revision
02960R	1:100 @ A3	02960P_TCP_01	-
Date 26/09/2018	Type a		

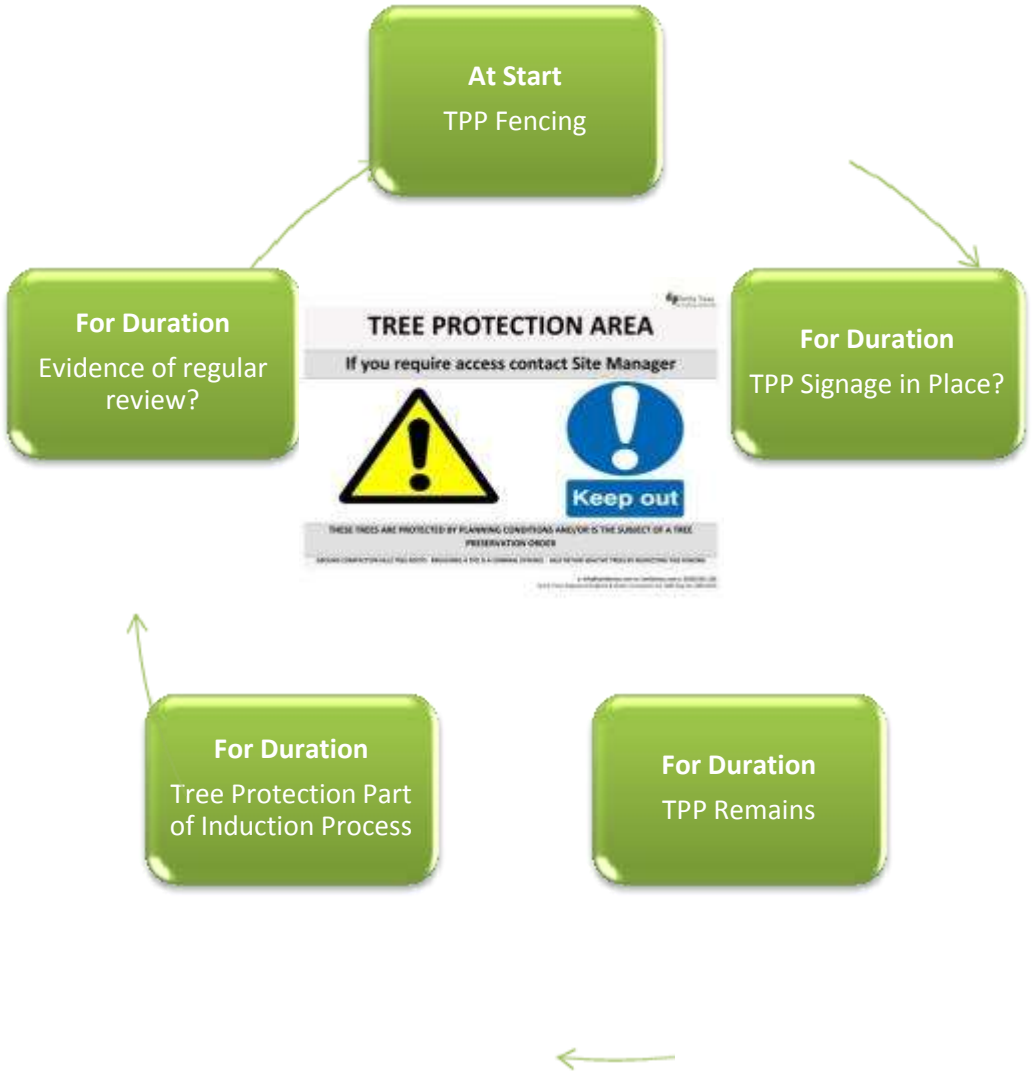
Tel: 01252 811 233
Email: Info@tamlatrees.com
Web: www.tamlatrees.com
Tamla Trees consulting arborists

Appendix 5 - Tree Protection Plan

Tree protection is essential to successfully integrate the proposal into the surrounding trees. It is designed to manage the impact on the underlying soil and rooting environment. It must therefore be installed prior to any further site activity. Even apparently minimal tracking of the soil near trees has the capacity to irretrievably modify the soil environment to the detriment of tree health and stability.

All our fencing specifications accord with advice and guidance within BS 5837. Modifications to fence types are possible but should be discussed prior to implementation. In all other instances the form detailed below should be shown. This offers the best protection to retained trees.

- **All tree protection must be in place prior to any site activities. It is recommended that this fencing is installed prior to any site works (including demolition if relevant).**
- **To be effective Tree Protection must remain in place for the duration of the development and form part of the site induction process.**
- **Site operatives to be briefed of fencing requirement & purpose.**
- **Basal shuttering proposed for T1.**

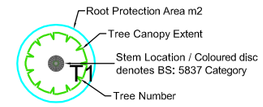

At Start
TPP Fencing
For Duration
TPP Signage in Place?
For Duration
TPP Remains
For Duration
Tree Protection Part of Induction Process
For Duration
Evidence of regular review?
TREE PROTECTION AREA
If you require access contact Site Manager
Keep out

T2 Silver Birch
B2

T1 Silver Birch
C1

Shuttered Tree

Tree Survey Drawing Key



See Tamla Trees, Tree Survey for Individual Tree Details

KEY

Please refer to Tamla Trees report for details

- Category A - Trees of high quality
- Category B - moderate quality
- Category C - low quality
- Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

Tree protection - Plywood Frame 1.2m tall

NOTE Tree positions indicatively mapped due to lack of detailed topographical plan

REV	AMENDMENTS	DRAWN	DATE	AUTH'D

PROJECT
91 Regent's Park Road,
London,
NW1 8UT

CLIENT
Alexander Martin Architects

TITLE
Tree Protection Plan (TPP)

Job	Scale	DRG NO	Revision
02960R	1:100 @ A3	02960P_TPP_01	-
Date: 26/09/2018	Type: a		

Tel: 01252 811 233
Email: Info@tamlatrees.com
Web: www.tamlatrees.com
Tamla Trees consulting arborists

Appendix 6 – Site Photographs

Image 1 – The proposal includes extending over the existing ground floor.

Image 2 – T1 Silver Birch

Image 3 – T2 is located away from the proposed works

Appendix 7 – Limitations

Full Legal Disclaimer

This report was prepared as a report of work instructed by client (as specified). Neither Tamla Trees ltd nor any associated company, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the report and its findings. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favouring by Tamla Trees ltd or any associated company. The views and opinions of authors expressed herein do not necessarily state or reflect those of Tamla Trees ltd or any associated company.

Copyright & Non-Disclosure Notice

The content, layout and any supporting digital files associated with this report are subject to copyright owned by Tamla Trees ltd. Exceptions to this are present where that copyright has been legally assigned to Tamla Trees ltd by another party/ organisation. In addition Tamla Trees ltd may utilise content generated under license. Reproduction, scanning, copying or distribution of this report in any form is prohibited without prior written agreement.

Third Party Disclaimer

Tamla Trees ltd, sub-contractors or suppliers will not be responsible or liable for any claim of loss or damage resulting from the third party use of the information contained within this report.

Specific - Trees

All tree inspections, unless specified, have been undertaken from ground level and using non-invasive techniques. Comments contained within the report on the condition and risk associated with any tree relate to the condition of the tree at the date and time of survey. Please note that the condition of trees is subject to change. This change may occur, but is not limited to biological and non-biological factors as well as mechanical/ physical changes to conditions in the proximity of the tree. Trees should be inspected at intervals relative to risk/ target areas and in accordance with relevant HSE guidance. Tamla Trees ltd can provide further information on this matter if required. Where full access to trees (Ivy, materials at base, location on 3rd party land) was not possible Tamla Trees ltd accept no liability for issues that arise.

Please note no statutory control checks have been undertaken (unless specified). Where tree surgery works have been identified these works are based on the assumption that planning is approved, no tree works should be undertaken prior to determination of this application without up to date confirmation of the Tree Preservation Order / Conservation Area Status of the vegetation. All works should be undertaken in accordance with the appropriate Duty of Care. This should include, for example, site specific risk assessments and due diligence inspections for the presence of protected species.

Any comment/ measurements relating to 3rd party trees have been made without full access to the tree(s). Should these trees have any impact on the proposed development we would advise you to instruct us to contact the 3rd party and undertake further detailed inspection work.

A legal Duty of Care requires that any tree works specified in this report should be performed by qualified, arboricultural contractors who have been competency tested to determine their suitability for such works in line with Health & Safety Executive Guidelines. Additionally all works should be carried out according to British Standard 3998 (2010) Recommendations for Tree Work.