BS5837 Arboricultural Impact Assessment

27 College Crescent, London, NW3 5LH

Client: **Natalie Maslaw**

Job Reference: 02306Rv2

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

Tamla Trees
consulting arborists

May 2015

Contents

1. Executive Summary

1.1 Tamla Trees ltd has been appointed by Natalie Maslaw to provide advice on the arboricultural issues relating to a proposed installation of a garden room within the rear garden of the property. We surveyed the site on the 1st May 2015. The survey accorded with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".

1.2 The site is currently the rear garden space for the property which is undergoing a general refurbishment.

1.3 This report seeks to identify the trees which may be affected by the proposal and detail the relevant protection measures to allow the council to support the proposal.

1.4 The main constraint trees are T1 (Purple Plum) and T2 (Lime) located in the 3rd party gardens to the north and east of the site. There is a minor encroachment in to the RPA areas from the garden room pile locations but the overall impact is likely to be minimal given the form of excavation and remaining rooting areas for these trees as well as the level of encroachment in % terms for the trees (<2%).

1.5 The site cannot be accessed by heavy machinery. The Garden Room consists of pre-fabricated panels which are brought on to site and erected with minimal construction activity. The building is supported on individual foundation 'pads' of which only 5 are located within the RPA of T1 & T2.

1.6 Camden Council website confirms the property is located within the Belsize Park Conservation Area but at this time the council have not yet responded to our TPO check.

1.7 This report is based on the supplied layout drawings referenced 27CC which shows the location and size of the proposed garden room.

2. Statutory Protection

2.1 We have been advised the site is located within a Conservation Area but not whether trees are subject to a Tree Preservation Order.

Conservation Area Status	
Is the site located within a Conservation Area?	Yes Belsize Park
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?	Unknown
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) At the time of writing Camden Council had not yet responded to our TPO check.	

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 & T3	-
Total Number	1 individual	None	2 individuals	None

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

BS 5837 Cat	A	B	C
General Residential Amenity Rear garden trees offering residential rather than wider public amenity	T2	-	T1

4.3 T3 (Cherry) is a small semi-mature tree offering no wider amenity.

4.4 There were no hedgerows on site.

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 34 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.

Underlying Soil Material contains Clay	**Yes**
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	-	T2 & T3	**T1 (Purple Leaf Plum) & T2 (Lime) (Foundations) –** The pad foundations required to support the garden room will be partially located within the RPA of T1 & T2. These are located at the very periphery of the trees RPA at distances away from where we would envisage structural roots to be present. Subject to the pads being hand dug and any roots >25mm leading to localized repositioning of any relevant pad we would not envisage any discernable impact on T1 or T2 from the proposal. The footprint encroachment is 12.5% of the RPA for T1 and 4.7% of the RPA for T2, however, as it is only the minimal pads themselves that require excavation the % encroachment is considerably less. **Services** – We have not been advised of the need for power, mains water or foul water discharge from the proposed garden room but scope exists to tie these in to the structure to the western end outside of all tree RPA's. Any rainwater soak away

				can also be located outside the RPA of T1 & T2. **T1 (Purple Leaf Plum) & T3 (Cherry) Canopy** – the proposal will require low branches of T1 to be crown lifted to 2.5-3m. T3 requires minor cutting back to generate space for the building. Our assessment on site indicates this will affect only minor low branches of both trees. All works should accord with BS3998 (Tree Works)

5.3 Tree Loss

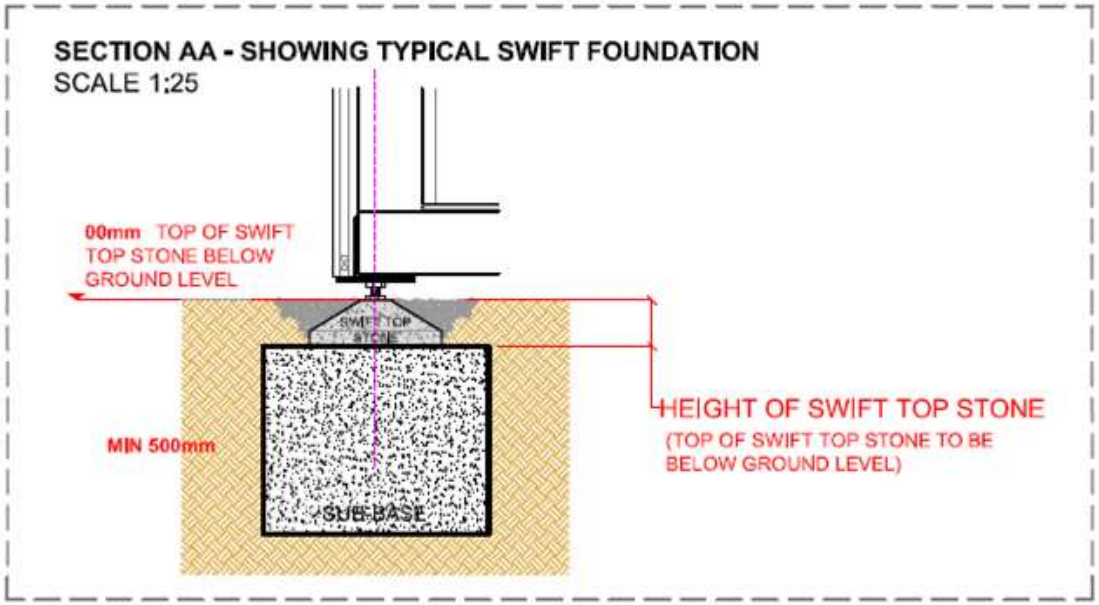
5.3.1 No trees will be removed to facilitate the proposal.

5.4 Foundations

5.4.1 Only a very minimal level of the Garden Rooms foundations encroach in to the RPA of T1 (12.5%) and T2 (4.7%). At the distances involved (see plans) we would expect only minimal feeder roots. Such roots are seasonal and generally short lived. Any loss of such fibrous roots from the pad excavations themselves will be minimal as the excavations result in a combined encroachment of <2%.

5.4.2 The level of incursion in to the RPA of T1 & T2 from the collective pad excavations constitutes less than 2% of the trees overall RPA and is therefore considered insignificant.

5.4.3 In addition the client has indicated that the foundations will comprise of hand dug 'pads'. These limit further any risk of root disturbance.



- Cross section of pad foundation
- All excavation works undertaken by hand
- Any roots >25mm originating from the direction of T1 or T2 will result in localised repositioning of the individual pad.
- Pits lined with non-permeable membrane to remove the risk of concrete to root contact

5.5 Surfaces near Trees

5.5.1 No new surfaces are proposed within tree RPA's.

5.6 Site Service Provision

5.6.1 We have not been provided with specific detail but as any services will draw on those from the existing property they will access the Garden Room from the west, outside tree RPA's.

5.6.2 The council may wish to consider an appropriate planning condition to secure any detail if concerns remain.

5.6.3 To limit maintenance impact from any leaf fall it is suggested that gutter guards be installed.

Suitable gutter guards (2 types shown above) should be fitted to ensure that leaf litter from the 3rd party trees does not block new guttering leading to additional pressure for tree works.

5.7 Ground Level Changes

5.7.1 No ground level changes are proposed.

5.7.2 It should be noted that T1 is located approximately 400mm above the site ground level.

5.8 Tree Shading of Proposal

5.8.1 The garden room utilizes large windows and typical use of such garden rooms means no tree shading issues have been identified.

5.9 Arboricultural Project Supervision

5.9.1 Most damage to trees on developments sites is caused inadvertently and to ensure continued protection during development a system of site monitoring is normal. However, the low level of tree protection issues on this site lead us to believe site inspection is disproportionate to the possible issues. As such no site inspections are proposed.

5.9.2 In the event the Local Authority wishes to have site inspections they are invited to secure a schedule by way of Planning Condition. To be effective the Local Planning Authority should provide us with a copy of the formal Decision Notice to ensure we can then contact and follow up the proposed monitoring. A copy of the Decision Notice should be emailed to info@tamlatrees.com .

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	Plum (Purple)	0.3	1	8.9	4	3.5	4.4	4	C1	Mature	20 to 40	1.8	3rd party tree so unable to fully inspect. Stem divides low down. Ivy on lower stem. Ground level is higher on 3rd party side of wall.	Crown lift overhanging branches to 2.5/3m. All works to accord with BS3998	3.6
T2	Lime	0.55	1	17	6	6	6	6	A1	Mature	> 40	5.5	3rd party tree so unable to fully inspect. Ivy on lower stem. Has been topped/ pollarded at 7.5m but canopy now fully regrown.	No works	6.6
T3	Cherry	0.09	M/S	4.5	2.1	1.1	2.1	3	C1	Early-mature	10 to 20	1.6	Multi stemmed from ground level. Low visual significance. Canker evident.	Cut back branches to create 1m clearance. All works to accord with BS3998	1.1

Appendix 3 – Tree Works Schedule

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

Tree Surgery

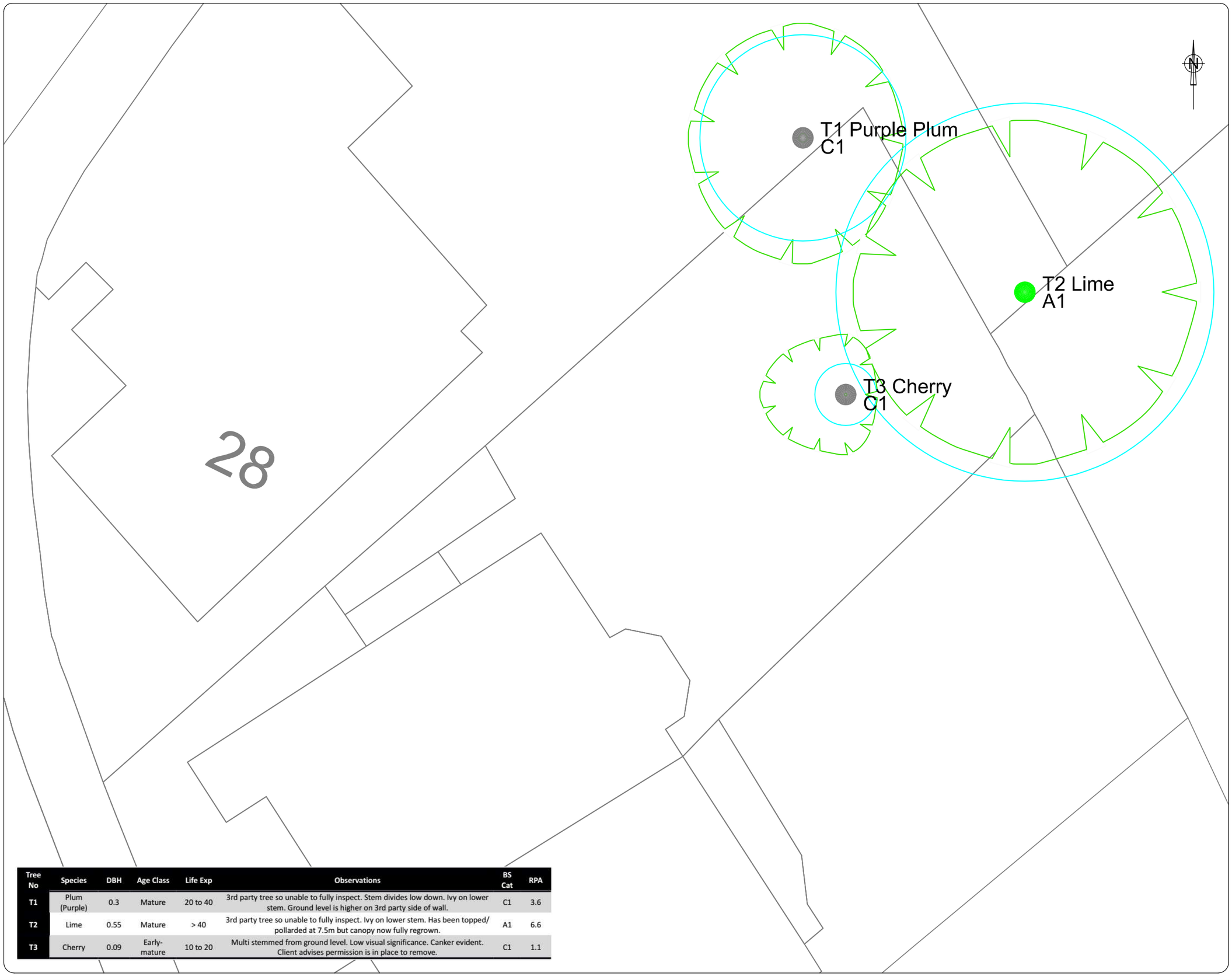
Tree No.	Species	Proposed Tree Works	BS Cat
T1	Purple Leaf Plum	Crown lift overhanging branches to 2.5/3m. All works to accord with BS3998	C1
T3	Cherry	Cut back branches to create 1m clearance. All works to accord with BS3998	C1

Proposed Removal

None

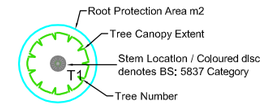
Tree No.	Species	Proposed Works	Observations	BS Cat

Appendix 4 - Tree Constraints Plan



Tree No	Species	DBH	Age Class	Life Exp	Observations	BS Cat	RPA
T1	Plum (Purple)	0.3	Mature	20 to 40	3rd party tree so unable to fully inspect. Stem divides low down. Ivy on lower stem. Ground level is higher on 3rd party side of wall.	C1	3.6
T2	Lime	0.55	Mature	> 40	3rd party tree so unable to fully inspect. Ivy on lower stem. Has been topped/ pollarded at 7.5m but canopy now fully regrown.	A1	6.6
T3	Cherry	0.09	Early-mature	10 to 20	Multi stemmed from ground level. Low visual significance. Canker evident. Client advises permission is in place to remove.	C1	1.1

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
27 College Crescent,
London,
NW3 5LH

CLIENT
Natalie

TITLE
Tree Constraint Plan (TCP)

Job	Scale	DRG NO	Revision
02306R	1:125 @ A3	02306P_TCP_01	A
Date 13/05/2015	Type a		

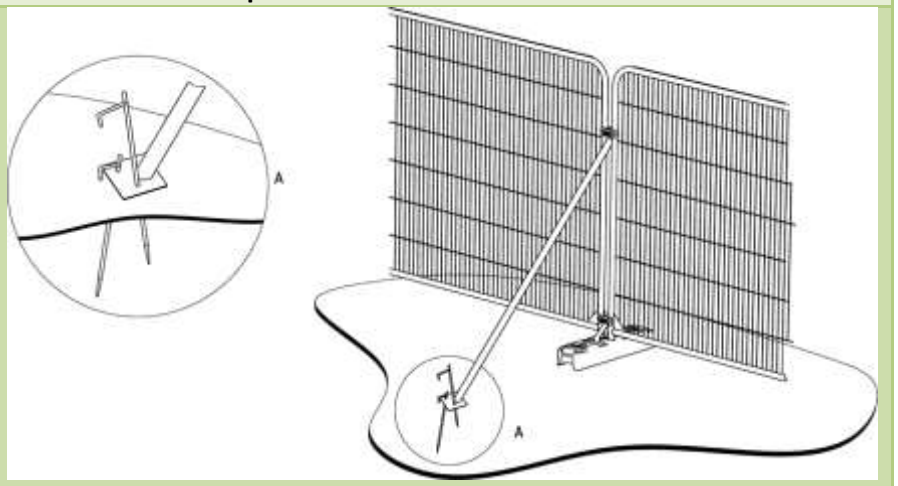
Tamla Trees
consulting arborists

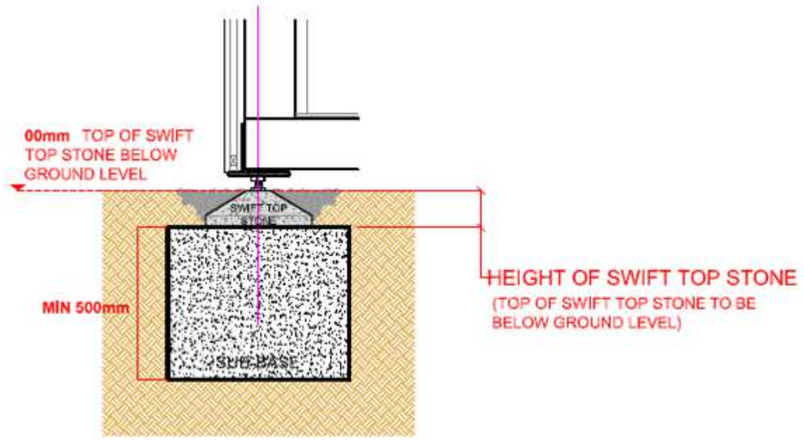
Appendix 5 - Tree Protection Plan

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 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.

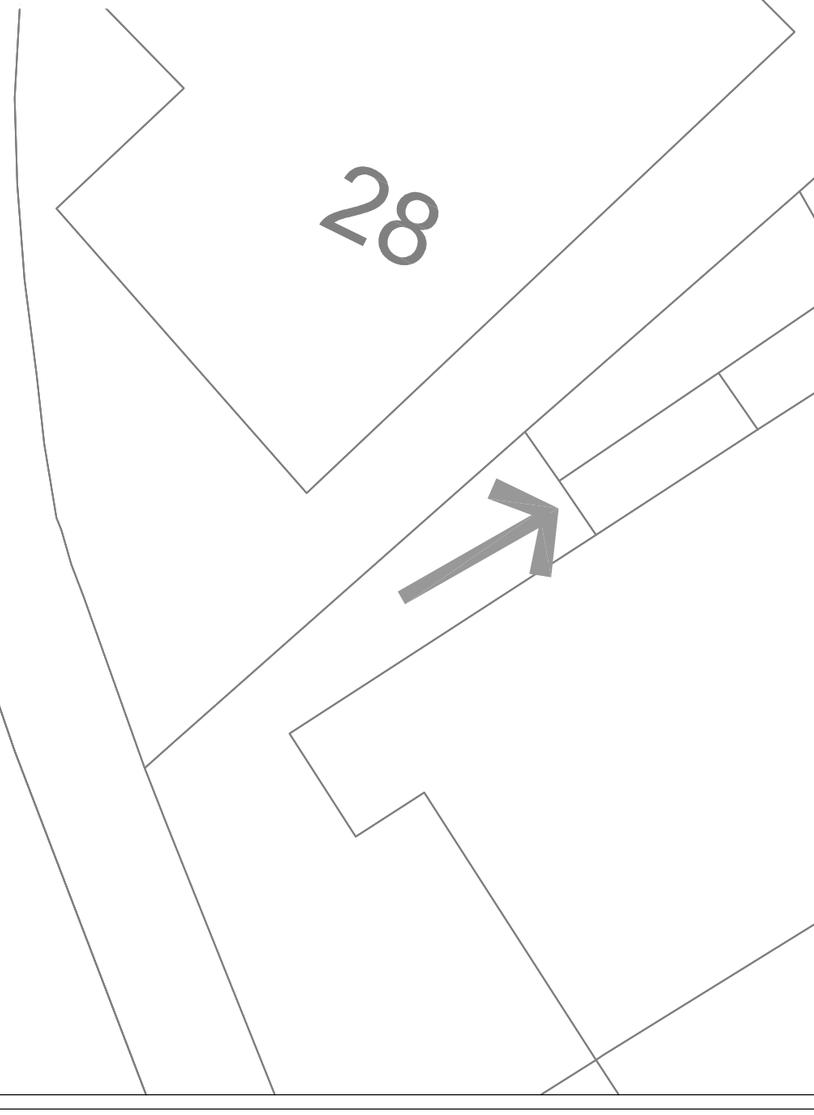
All our fencing specifications accord with advice and guidance within BS 5837. Modifications to fence types are possible but should be discussed prior to implementation. In all other instances the form detailed below should be shown. This offers the best protection to retained trees.

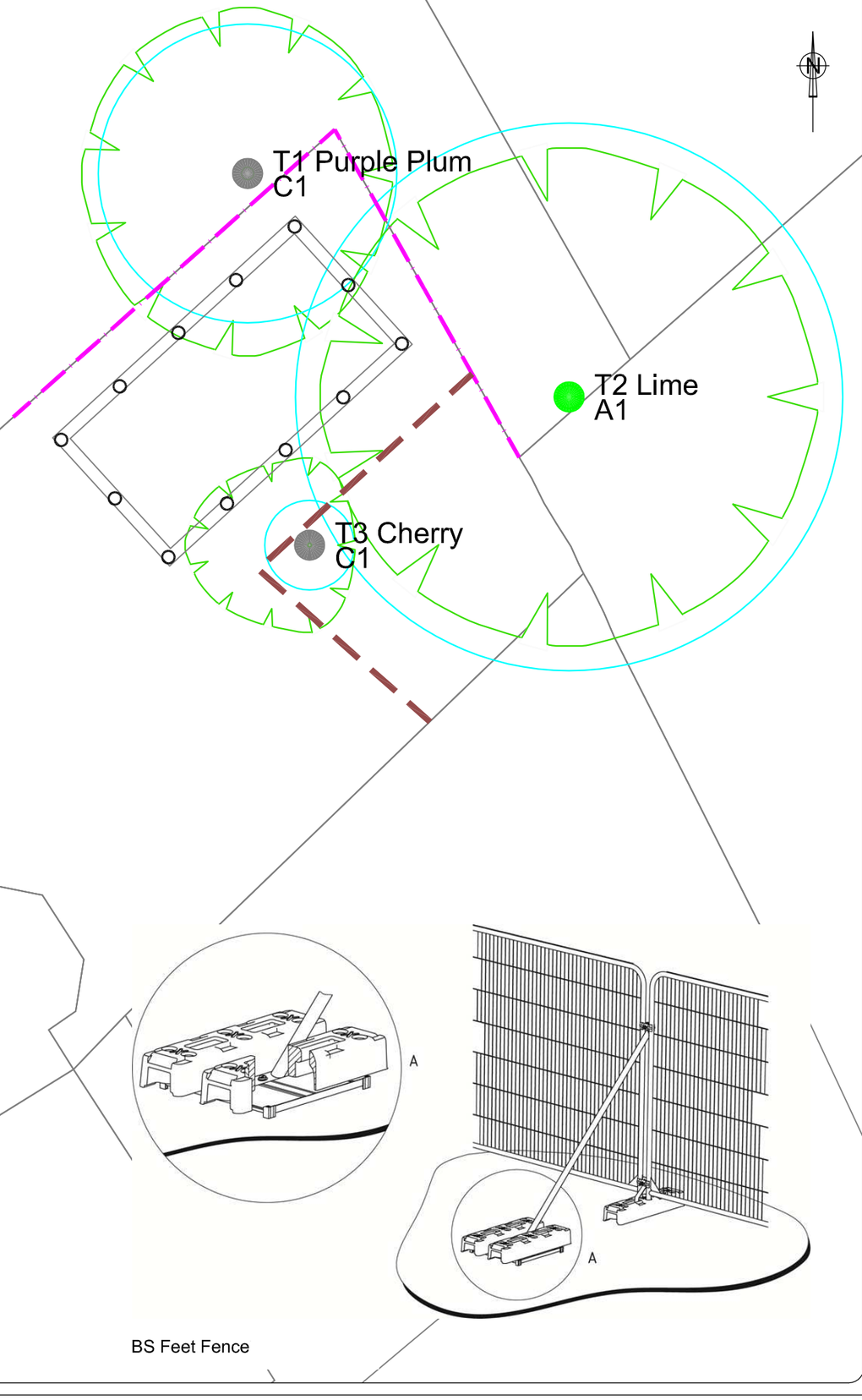
- **Fencing to be installed prior to any on site works.**
- **Fencing to be maintained during construction phase.**
- **To be effective it should be signed with the provided sign to advise site workers of the fencing function.**
- **Additional protection provided by established boundary walls.**





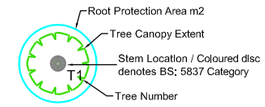
Concrete Pad footing





BS Feet Fence

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

Location of protective fencing

Boundary acts as further physical tree protection

400mm diameter x 4m deep piles to support suspended floor slab

Site access (Pedestrian only)

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

REV	AMENDMENTS	DRAWN	DATE	AUTH'D

PROJECT

27 College Crescent,
London,
NW3 5LH

CLIENT

Natalie

TITLE

Tree Protection Plan (TPP)

Job	Scale	DRG NO	Revision
02306R	1:125 @ A3	02306P_TPP_01	A
Date 13/05/2015	Type a		

Tamla Trees
consulting arborists

Appendix 6 – Site Photographs

Image 1 – Pedestrian access point. No heavy machinery can or will be brought on site.

Image 2 – T1 showing overhanging branches

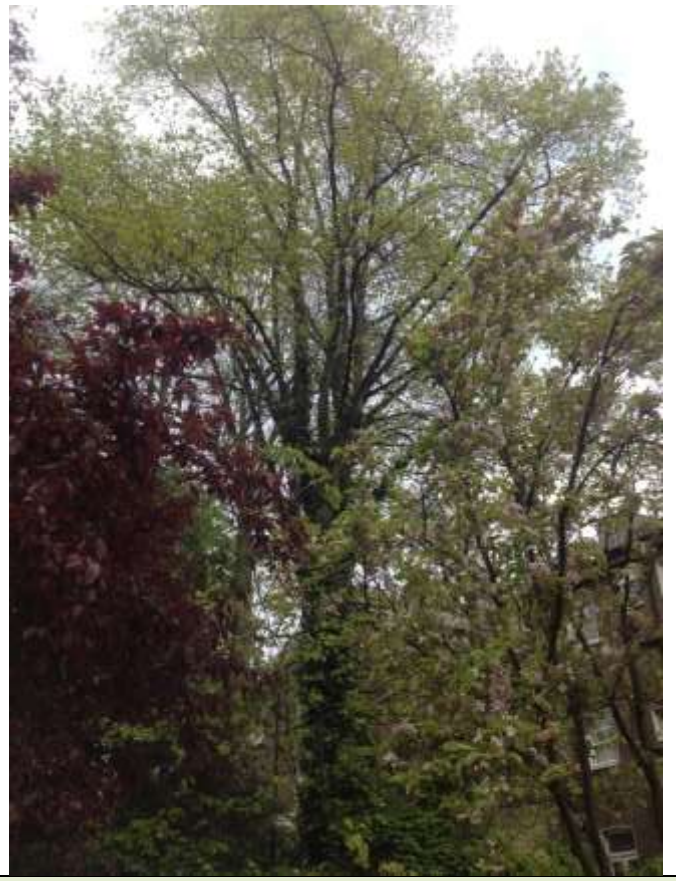


Image 3 – T2 (Lime)

Image 4 – T3 (Cherry)

Image 5 – Rear garden

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.