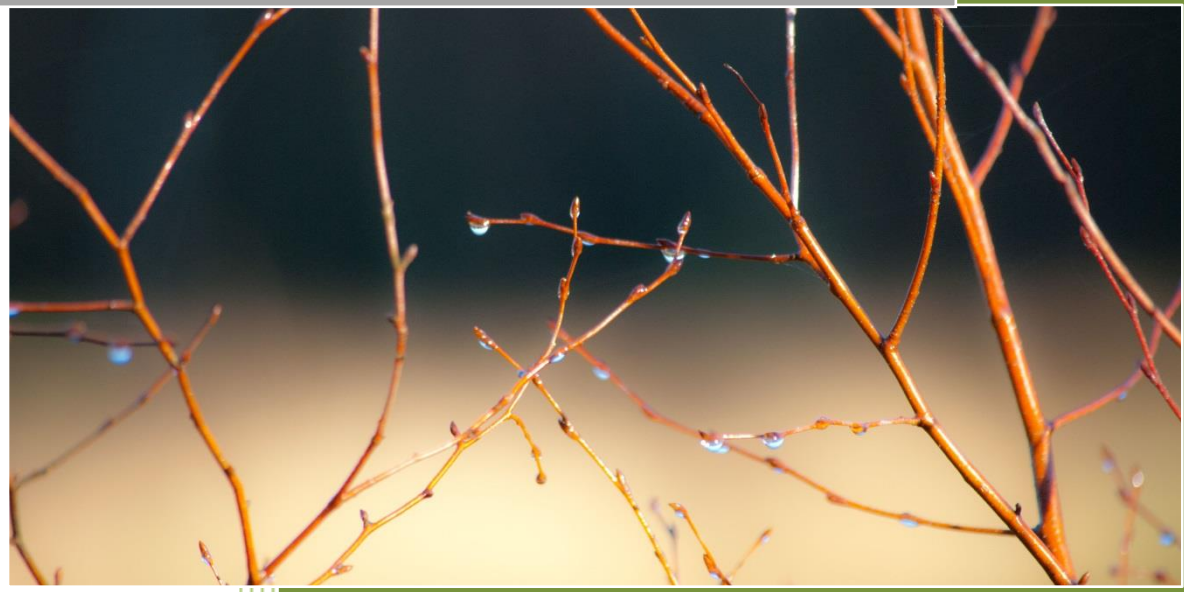
BS5837 Arboricultural Impact Assessment



7 Boscastle Road, London, NW5 1EE

Client: **Andrew Franklin & Dr. Caroline Elton**

Job Reference: 02260R

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

Tamla Trees
consulting arborists

February 2015

Contents

1. Executive Summary

1.1 Tamla Trees ltd has been appointed by Andrew Franklin & Dr. Caroline Elton to provide advice on the arboricultural issues relating to a proposed residential extension of the property. During consideration of the application London Borough of Camden have raised concerns relating to trees. We surveyed the site on the 11th February 2015. The survey accorded with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".

1.2 The development site is currently a residential property. The rear garden is generally laid to lawn with shrubs and established trees.

1.3 The council have indicated concerns regarding the lack of arboricultural information with the planning submission to support the application. This specifically relates to the mature Mulberry tree (referenced as T1 within this report).

1.4 The main constraint tree is T1 (Mulberry) which we are advised is not the subject of a TPO. The property is located within a Conservation Area.

1.5 The Mulberry (T1) has a number of defects and is not significant in terms of its wider amenity, indeed it cannot be seen from a public place. Furthermore, specific foundations to seek to accommodate such a tree are disproportionate to its condition and retention lifespan. As a result it is proposed to remove this tree to facilitate the proposal.

1.6 This report seeks to provide detail and demonstrate how the proposal can be implemented without adverse impact for the retained trees. In addition it seeks to justify the removal of T1 (Mulberry).

1.7 This report is based on the supplied layout drawings referenced as: Ground floor as proposed Opt 3 Dr No 001.

2. Statutory Protection

2.1 We have been advised that the site is not affected by a TPO but is located within a Conservation Area.

Conservation Area Status	
Is the site located within a Conservation Area?	Yes
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.	

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	-	T6 & H1	T3, T4, T5 & T7	T1, T2 & T8
Total Number	None	1 individual tree 1 hedge	4 individual trees	3 individual trees

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
Rear Garden **Trees visible only from within the rear garden and from the subject property and immediate neighboring properties**	-	T6	T3, T4, T5 & T7
Front Garden **Localised ground level screening**	-	H1	-

4.3 The hedgerow on site does not qualify for consideration within the 1997 Hedgerow Regulations Act.

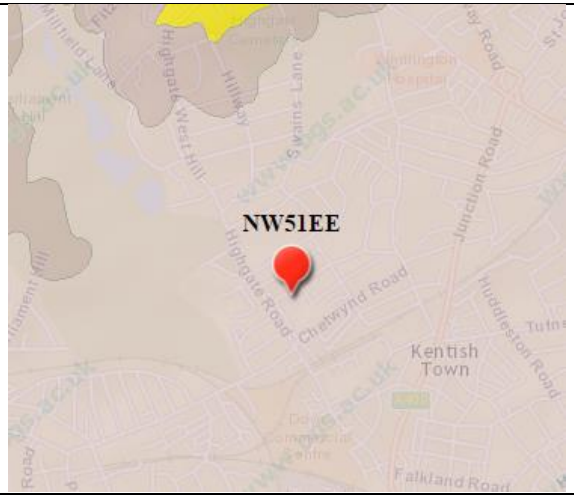
5.0 Arboricultural Impact Assessment

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	-	-	-	**None –** The removal of T1 & T3 means no works are proposed within retained tree RPA's. There is scope for inadvertent damage to the valuable screening hedge (H1) and it is proposed to protect the internal sides of this hedge with ply board and temporary ground protection (see Appendix 5 - Tree Protection Plan)

5.3 Tree Loss

5.3.1 The proposal seeks to remove T1 (Mulberry). It is this tree which led to the council requesting a report in relation to the existing planning application.

5.3.2 T1 is visually insignificant to the wider amenity as it is a low level tree in terms of overall size and is located within the rear garden. As often occurs with this species there has been partial root plate failure and the tree is now heavily propped for support.

5.3.3 In addition the tree has multiple areas of well-established stem decay (see photos). The history of root plate failure combined with the extensive stem decay have led us to consider the tree has a safe useful life expectancy of <10 years. As a result it has been classified as a U Cat tree in accordance with BS5837.

5.3.4 When considering potential tree loss from within conservation areas local authorities must decide whether the tree makes a "significant contribution to the wider amenity from a public place". T1 is not visible from Boscastle Road and its wider amenity (to the public) is therefore considered minimal. The tree is certainly not worthy of inclusion within its own Tree Preservation Order.

5.3.5 T3 (Sycamore) is also identified for removal. This is a small low quality self-set Sycamore tree and its stem diameter is such that it is below the official BS size threshold but has been included for completeness.

5.3.6 In addition to the 2 further U Cat trees (T2 Lilac & T8 Unknown Dead) are identified for removal.

5.4 Foundations

5.4.1 No foundation work is proposed within the RPA of retained trees or hedges.

5.5 Surfaces near Trees

5.5.1 There is no on site surfaces proposed within the RPA of retained trees.

5.5.2 A temporary material storage area to the front of the property is advised (see Appendix 5) to limit any inadvertent impact on H1. This will included temporary ground protection and ply sheet hoarding to physically protect the hedge.

- No permeable sheeting to limit spills leeching in to underlying soil.
- Top dressed with bark mulch.
- Ply sheeting/ weatherboard covering

Site materials can then be stored on the sheeting/ weatherboard

5.6 Site Service Provision

5.6.1 The proposal will seek to draw on the existing site services.

5.7 Ground Level Changes

5.7.1 No ground level changes within tree or hedge RPA's are proposed.

5.8 Tree Shading of Proposal

5.8.1 No 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. The protective fencing should be located as indicated on the TPP plans and be secured before any on site development activity.

5.9.2 The low level of arboricultural issues associated with this development lead us to believe the costs of site supervision are disproportionate to the potential issues. As a result we have not included provision for any site supervision.

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	Mulberry	0.4	1	5	3	1.5	3	6	U	Over-mature	<10	1	Failed on root plate and now propped. Extensive basal decay. Significant pruning history.	Remove	4.8
T2	Lilac	0.18	1	4.2	2.5	1.8	1.8	1.8	U	Mature	<10	2	Completely covered in Ivy. May even be dead already.	Remove	2.2
T3	Sycamore	0.05	1	4	1	1	1	1	C1	Young	20 to 40	1	Technically below BS size threshold but included for completeness. Not suitable for long term retention given very high growth potential. Poor overall form and proximity to boundary wall.	No works	0.6
T4	Laurel (Bay)	0.18	M/S	4	2	2	2	2	C1	Mature	20 to 40	1	Multi stemmed specimen with poor overall form due to previous pruning history.	No works	2.2

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							
T5	Hazel	0.05	M/S	5	3	3	1.5	1.5	C1	Mature	20 to 40	1	Lapsed coppice which has then been topped. Ivy covered. Would benefit from re-coppicing.	Re-coppice (discretionary)	0.6
T6	Yew	0.18	M/S	5	3.2	3.8	3.4	3.2	B1	Early-mature	> 40	1.8	Best tree on site. Multi stemmed. Would benefit from removal of old pruning stubs on lower stem.	Remove deadwood stubs on low stem	2.2
T7	Fig	0.22	1	5	2.9	3	3.2	3	C1	Mature	20 to 40	1.8	Subject to poor previous pruning. Close to boundary wall.	No works	2.6
T8	Unknown Dead	0.35	1	4.6	1.5	1.5	1.5	1.5	U	Mature	<10	1.6	Completely covered in Ivy. Appears dead.	Remove	4.2
H1	Privet	0.05	1	2	0.5	0.5	0.5	0.5	B2	Mature	20 to 40	0.1	Established hedge which would benefit from regular pruning to shape.	Prune to shape	0.6

Appendix 3 – Tree Works Schedule

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

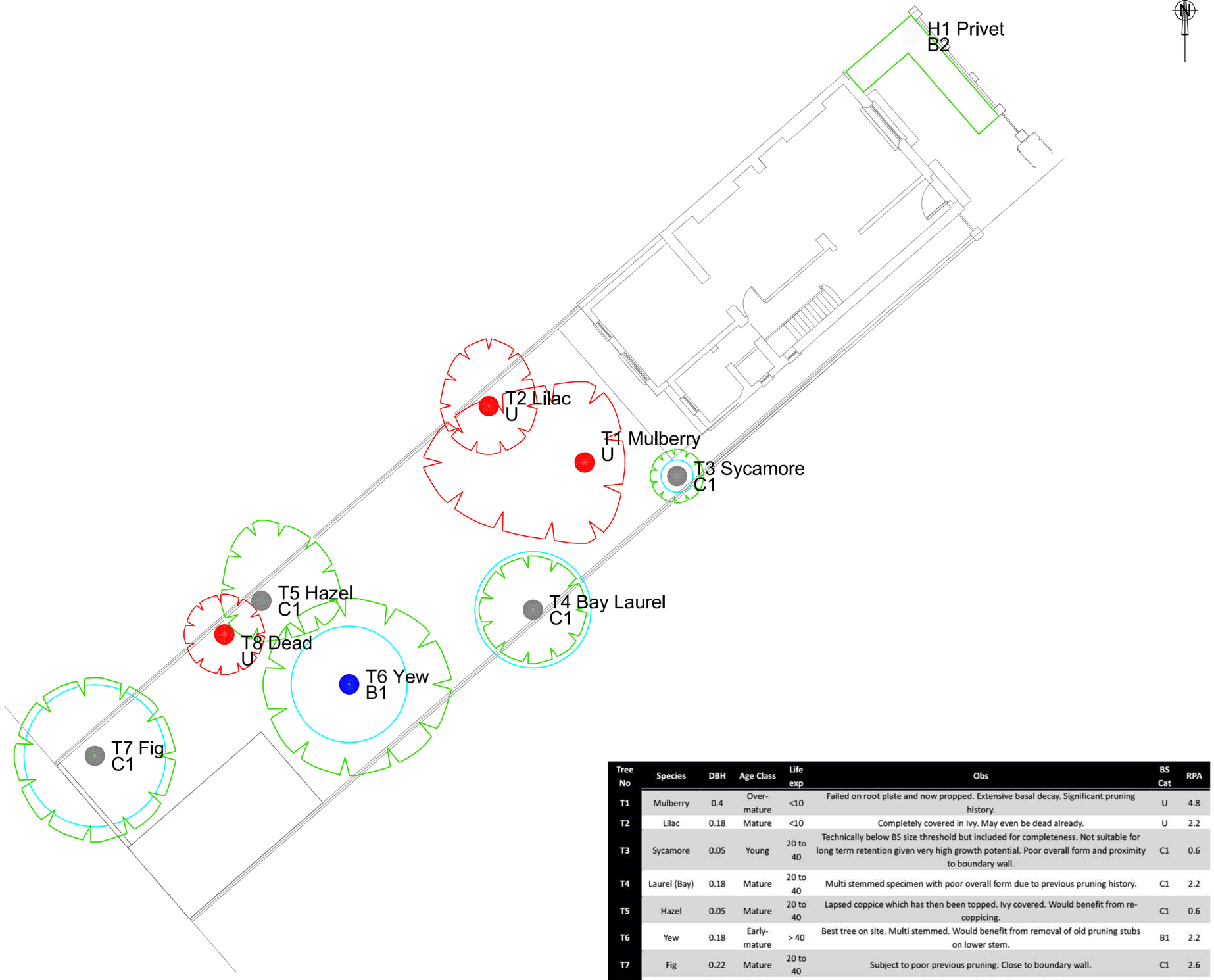
Tree Surgery

Tree No.	Species	Proposed Tree Works	BS Cat
T5	Hazel	Re-coppice (discretionary)	C1
T6	Yew	Remove deadwood stubs on low stem	B1
H1	Privet	Prune to shape	B2

Proposed Removal

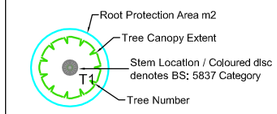
Tree No.	Species	Proposed Works	Observations	BS Cat
T1	Mulberry	Remove	Failed on root plate and now propped. Extensive basal decay. Significant pruning history.	U
T2	Lilac	Remove	Completely covered in Ivy. May even be dead already.	U
T3	Sycamore	Remove	Technically below BS size threshold but included for completeness. Not suitable for long term retention given very high growth potential. Poor overall form and proximity to boundary wall.	C1
T8	Dead	Remove	Completely covered in Ivy. Appears dead.	U

Appendix 4 - Tree Constraints Plan



Tree No	Species	DBH	Age Class	Life exp	Obs	BS Cat	RPA
T1	Mulberry	0.4	Over-mature	<10	Failed on root plate and now propped. Extensive basal decay. Significant pruning history.	U	4.8
T2	Lilac	0.18	Mature	<10	Completely covered in Ivy. May even be dead already.	U	2.2
T3	Sycamore	0.05	Young	20 to 40	Technically below BS size threshold but included for completeness. Not suitable for long term retention given very high growth potential. Poor overall form and proximity to boundary wall.	C1	0.6
T4	Laurel (Bay)	0.18	Mature	20 to 40	Multi stemmed specimen with poor overall form due to previous pruning history.	C1	2.2
T5	Hazel	0.05	Mature	20 to 40	Lapsed coppice which has then been topped. Ivy covered. Would benefit from re-coppicing.	C1	0.6
T6	Yew	0.18	Early-mature	> 40	Best tree on site. Multi stemmed. Would benefit from removal of old pruning stubs on lower stem.	B1	2.2
T7	Fig	0.22	Mature	20 to 40	Subject to poor previous pruning. Close to boundary wall.	C1	2.6
T8	Unknown	0.35	Mature	<10	Completely covered in Ivy. Appears dead.	U	4.2
H1	Privet	0.05	Mature	20 to 40	Established hedge which would benefit from regular pruning to shape.	B2	0.6

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

REV AMENDMENTS DRAWN DATE AUTH'D

PROJECT
7 Boscastle Road,
London,
NW5 1EE

CLIENT
Andrew Franklin &
Dr. Caroline Elton

TITLE
Tree Constraint Plan (TCP)

Job	Scale	DRG NO	Revision
02260R	1:150 @ A3	02260P_TCP_01	-
Date 16/02/2015	Type a		

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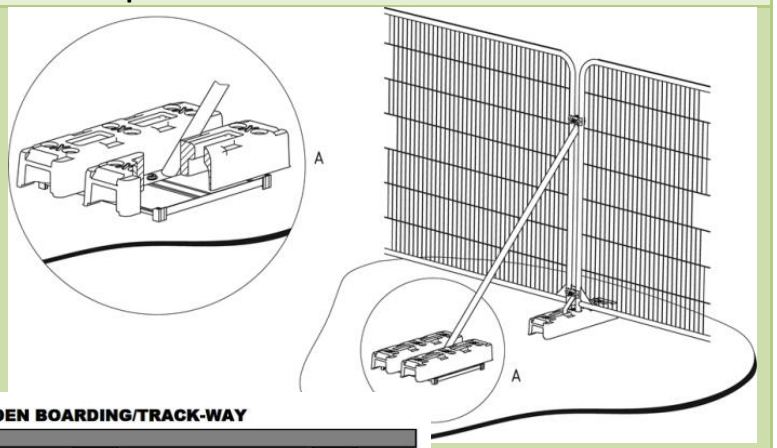
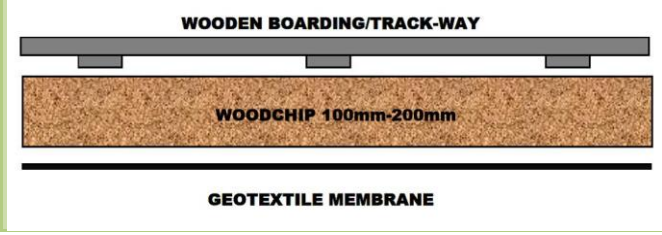
Appendix 5 - Tree Protection Plan

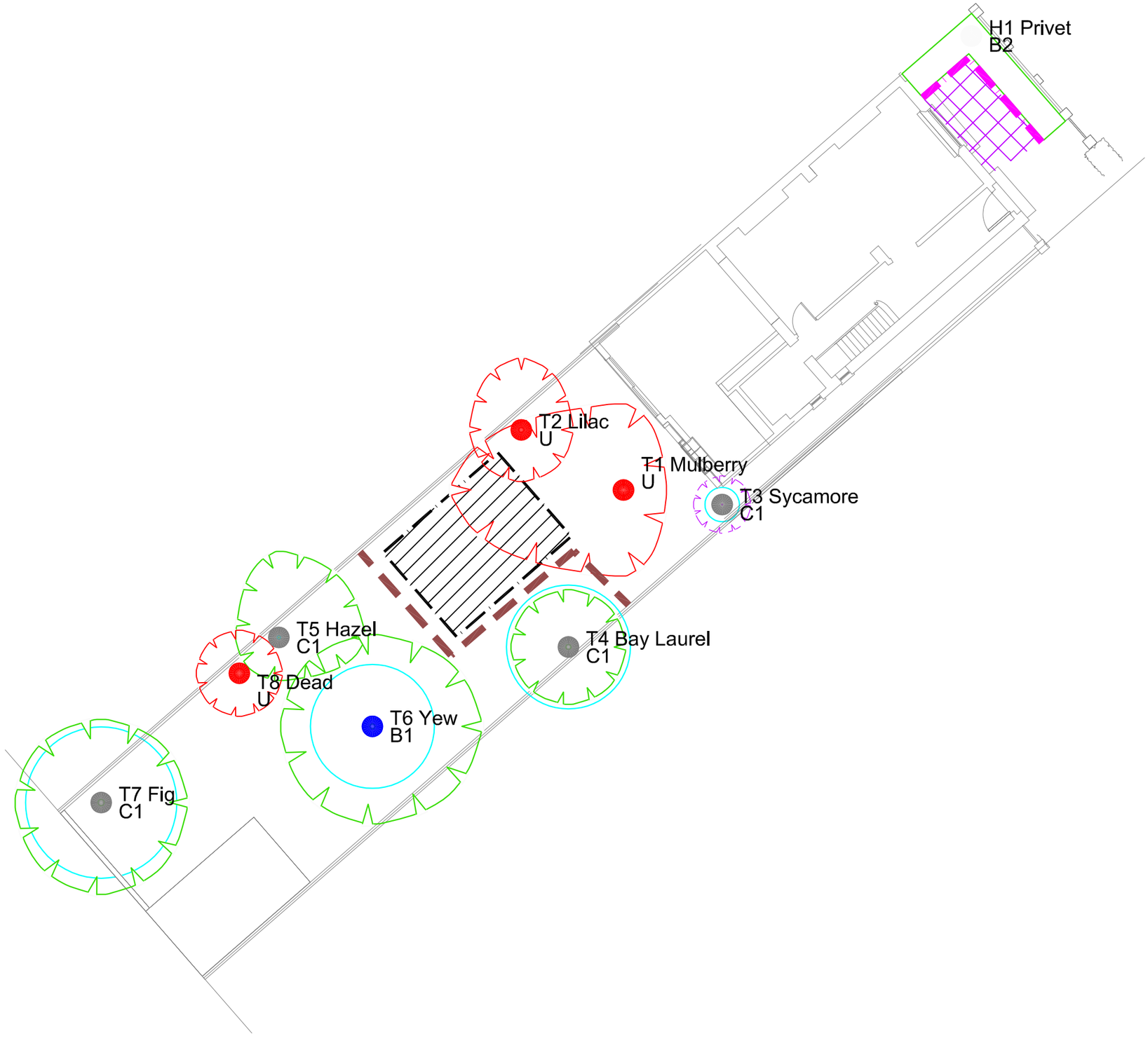
Tree protection is essential to successfully integrate the proposal into the surrounding trees. It is designed to manage the impact on the underlying soil and rooting environment. It must therefore be installed prior to any site activity. Even apparently minimal tracking of the soil near trees has the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

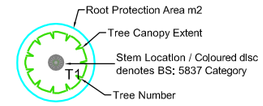
- **Fencing to be installed prior to any on site works.**
- **Fencing to be maintained during construction phase.**
- **To be effective it should be signed with the provided sign to advise site workers of the fencing function.**
- **Herras fencing for rear garden**
- **Temporary ground protection and ply hoarding for internal face of H1**







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

Proposed removal

Proposed removal - to facilitate Development

Location of protective fencing

H1 - Protection with 1.6m ply hoarding

Temporary ground protection

Area for site storage

REV	AMENDMENTS	DRAWN	DATE	AUTH'D

PROJECT
7 Boscastle Road,
London,
NW5 1EE

CLIENT
Andrew Franklin &
Dr. Caroline Elton

TITLE
Tree Protection Plan (TPP)

Job	Scale	DRG NO	Revision
02260R	1:150 @ A3	02260P_TPP_01	-
Date: 16/02/2015	Type: a		

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Appendix 6 – Site Photographs

Image 1 – H1 and property front

Image 2 – T1 (Mulberry)

Image 3 – T1 (Mulberry) showing stem decay

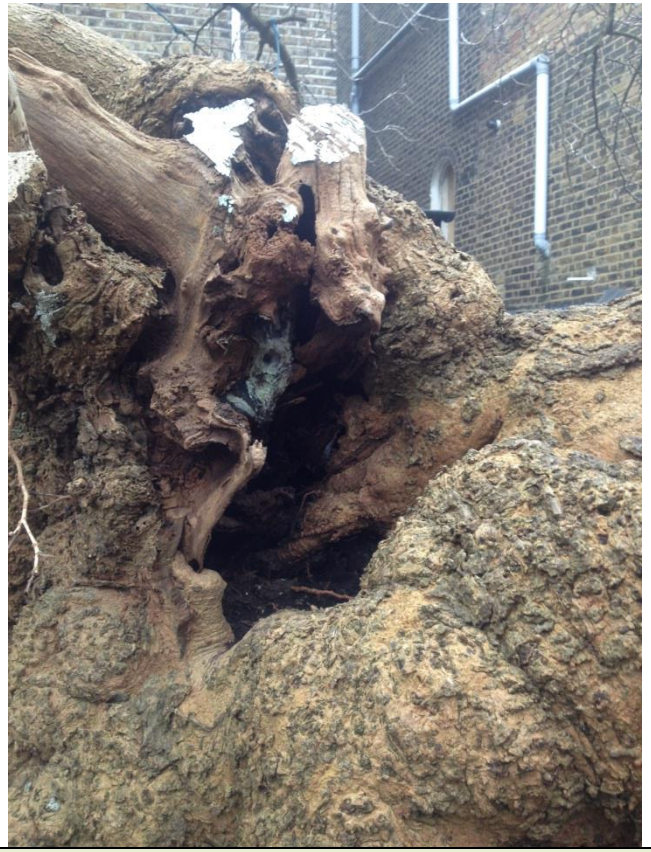

Image 4 – T1 (Mulberry) further stem decay

Image 5 – T1 (Mulberry) showing propping

Image 6 – T3 (Sycamore)

Image 7– T6 (Yew) showing dead wood stubs

Image 8 – T6 (Yew)

Image 9 – T4 (Bay Laurel)

Appendix 7 – Limitations

Full Legal Disclaimer

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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.