BS5837 Arboricultural Impact Assessment



Aylesbury Estate, FDS Site, Southwark, London

Client: **Notting Hill Housing Association**

Job Reference: 02027R

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Tamla Trees consulting arborists

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1. Executive Summary

- 1.1 Tamla Trees Itd has been appointed by Notting Hill Housing Association (via HTA Architects) to provide advice on the arboricultural issues relating to proposed redevelopment of Aylesbury Estate. This report deals with issues associated with the First Development Site (FDS). We surveyed the site in August/ September 2014. The survey accorded with BS5837:2012 "Trees in relation to design, demolition and construction Recommendations". Tree numbering is aligned with a previous site survey which is now superseded.
- 1.2 The site is currently occupied by a mix of residential properties/ buildings, a number of which are currently not occupied.
- 1.3 Aylesbury Estate was built between 1963 1977. Apart from a small number of privately planted or self-set trees the existing tree stock dates from the original development. None of the trees pre-date this original development.
- 1.4 We have been advised that the underlying soil contains much of the original spoil from land cleared prior to the development. The underlying rooting medium is poor quality and this is evident in the tree growth of a number of the on-site trees, which is below average for the species and age class.
- 1.5 The arboricultural issues associated with the redevelopment can be summarised as tree loss and associated issues with the development such as: development pressure (demolition and construction), level changes, soil compaction and services implementation.
- 1.6 Whilst the proposal will result in the loss of the majority of site trees modern arboricultural and landscape techniques will address the poor soil growing medium which should ensure that the replacement trees develop in to a much more effective arboricultural/ amenity resource.
- 1.7 London Borough of Southwark has confirmed that the site is not affected by a Tree Preservation Order or located within a designated Conservation Area.
- 1.8 It is based on HTA Architects Layout Dr No: HTA-L D01-X-XX-DR-2900 as well as associated service drawings.



2. Statutory Protection

2.1 The site is known to not be affected by a TPO or Conservation Area at the time of writing.

Conservation Area Status	
Is the site located within a Conservation Area?	No
Notes: All trees larger than 7.5cm diameter at 1.5m above ground level are subject to regulations within a Conservation which are dead and dangerous but clarification before any tree works is advised. A <u>notification</u> is required in many circumstance of the conservation of the conser	
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

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 <u>application</u> may be required before undertaking works.



3. Terms of Reference

- 3.1 <u>BS5837:2012</u> '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

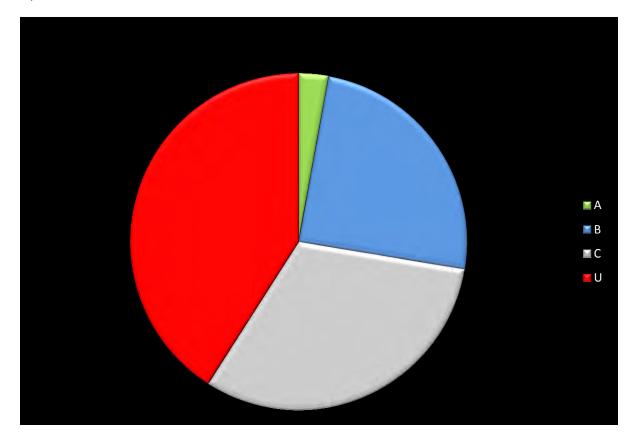
4. The Trees

4.1 The trees can be summarised as follows:

BS 5837 Cat	А	В	С	U		
Specific Trees & Groups	ic Trees & Groups T28, T49, T54		T11, T14, T22, T24, T34, T35, T36,	T8, T10, T12, T13, T15, T17, T18, T19,		
		T39, T48, T52, T55,	T41, T42, T45, T46, T47, T50, T53,	T20, T23, T25, T27, T29, T32, T33, T38,		
		T56, T57, T58, T61,	T60, T69, T70, T80, T82, T84, T85,	T40, T43, T44, T51, T59, T62, T63, T67,		
		T65, T66, T75, T77,	T87, T88, T89, T94, T100, T101,	T71, T73, T74, T76, T78, T79, T81, T83,		
		T90, T91, T92, T93,	T102, T115, T116, T117, T118, T120	T86, T95, T96, T97, T98, T103, T104,		
		T99, T106, T107,		T105, T119, T121, T122		
		T108, T109, T123				
			TG4, TG5	TG1, TG2, TG3		
Total Number 3 Individuals		26 Individuals	33 Individuals	43 Individuals		
			2 Groups	3 Groups		

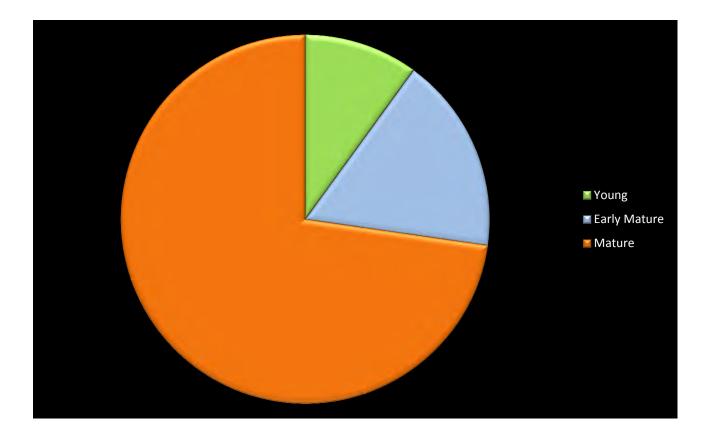


4.2 A visual representation of the BS5837 Tree Categories is shown below. This demonstrates that the current tree stock is predominantly BS5837 C & U Cat (lower quality trees).





4.3 A visual representation of the Age Class distribution shows that the trees are predominantly mature. A sustainable tree stock should have a much greater mix of Age Class distribution than is currently present and the redevelopment affords a real opportunity to deliver a lasting improvement to in both quality and age class distribution.





4.4 The main tree locations and a summary of their visual contributions can be summarized as follows:

BS 5837 Cat	А	В	С
Northern Boundary Site edge trees with some canopy screening	-	T90, T91, T92, T93,	T87, T88, T89, T94
value and street scene amenity to Westmoreland Road			TG4
Eastern Boundary Site edge boundary trees with screening value and street scene amenity to Portland Street	-	T99, T106, T107, T108, T109	T100, T101
Western Boundary Site edge boundary tree contributing to street scene of Badenham Close	_	T123	_
Southern Boundary Site edge boundary trees contributing to the street scene of Albany Road	T49, T54	T9, T48, T52,	T45, T46, T47, T50, T53, T69, T70

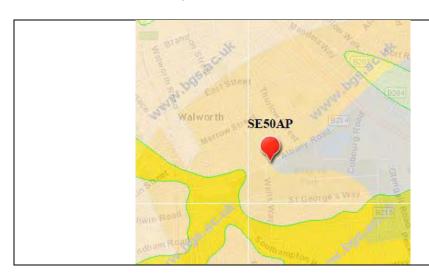
- 4.3 All other non-listed trees provide an amenity but this is from within the site. That is, their removal will have no discernible impact when viewed from the public highways external to the site.
- 4.4 No hedgerows are present and as such the Hedgerow Regulations 1997 do not apply to this development.



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. By comparison a clay soil is more easily compressed, particularly when wet and compression can have a greater impact on tree health (by way of root death).
- 5.1.3 As shown below the site is located within a Lambeth Group (which contains CLAY). Care for all works within the tree RPA's will be required to limit the risk of soil compaction.



Soil Description

<u>Lambeth Group</u> - Sand, Silt And Clay. Sedimentary Bedrock formed approximately 56 to 66 million years ago in the Palaeogene Period. Local environment previously dominated by swamps, estuaries and deltas.



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.
- 5.1.5 It is likely that much of the upper soil horizons are made of historical fill material.

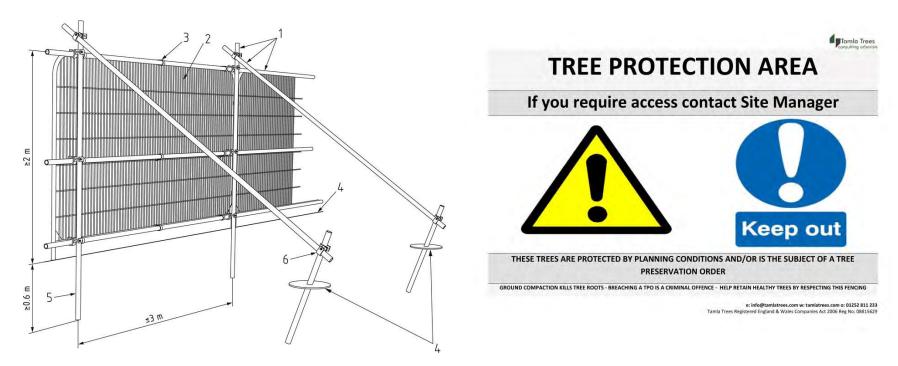
5.2 Root Protection Area (RPA) Incursions

- 5.2.1 The proposal will result in RPA incursions for demolition works and we have included a Tree Protection Plan (Demolition). It is envisaged that the site boundary hoarding will be located in such a way that the physical stems of retained trees T88, T89, T90, T91, T92, T93, T94, T106, T107, T108 & T109 will be located outside the site boundary. This significantly limits the risk of direct and indirect damage during demolition (and construction works).
- 5.2.2 Due to the RPA encroachment of T106, T107, T108 & T109 in to the site it is proposed that BS5837 compliant fencing be used to secure the integrity of that area during demolition and construction works. The physical removal and replacement of hard standings within this area will be dealt with



by way of detailed **Method Statement** and it is advised this is secured by way of a suitable **Planning Condition**. This should also address the removal of hard standing and revised hard landscaping for trees on Westmoreland Road (T88, T89, T90, T91, T92, T93 & T94).

5.2.3 Internally retained trees T39, T41, T52, T53 and T54 will be specifically fenced prior to any on site demolition. To be effective it is proposed that the full BS5837 fencing specification be used.



To be effective fencing must be robust and clearly signed

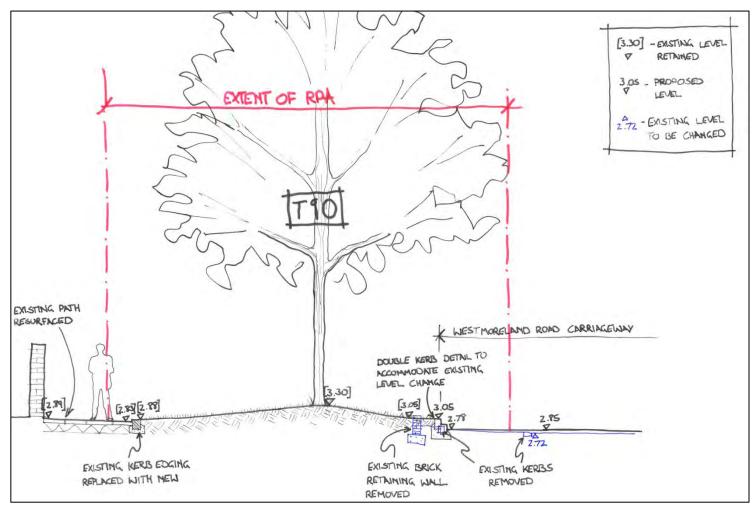


5.2.4 In terms of the proposed development the RPA incursions can be summarised as follows

BS 5837 Cat	Α	В	С	Summary
RPA Incursion	-	T88, T89, T90, T91, T92, T93, T106, T107, T108, T109	Т94	There will be a remodeling of the existing hard standing area to accommodate new parking. This has been designed to minimize issues associated with ground level changes. We would propose that the final detail, to include an appropriate site supervision program be secured by way of Planning Condition Site Supervision – Site supervision supported with site specific method statements will be a key consideration of the project.
RPA Incursion	-	T52 & T54	T39, T41, T53	T39 & T41 - These trees are to be retained within a new internal amenity space and there will be associated hard and soft landscape works within the RPA areas. T52, T53 & T54 - These trees are to be retained within existing site edge amenity space and there will be associated hard and soft landscape works within the RPA areas. The full detail of these works is proposed to be dealt with by way of detailed Method Statement secured by Planning Condition.



5.2.5 Sample HTA architect cross section sketch detailing works on Westmoreland Road (shown for T90):





5.3 Tree Loss

- 5.3.1 The proposed layout and report tree schedule shows the identified tree loss.
- 5.3.2 The design has sought to retain trees to the edge of the site and of higher visual prominence when viewed from the public highways.
- 5.3.3 Significant replanting/ landscaping is proposed as part of the development that will utilise a wide palate of amenity species and larger planting sizes to deliver an instant impact. Detail regarding these is outside the scope of this report.
- 5.3.4 A number of CAT U trees were identified as structural dangerous and regardless of the development timetable these should be removed at the earliest convenient opportunity.

5.4 Foundations

5.4.1 Foundations for the propose development are likely to be delivered by way of piling rig but sufficient space is considered to exist on site to allow the positioning and use of such a rig without the risk of direct or indirect damage.



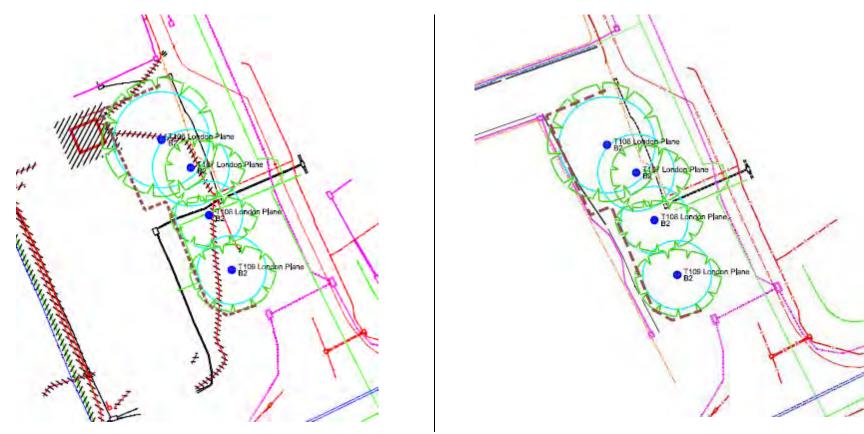
5.5 Surfaces near Trees

- 5.5.1 Proposed revisions to surfaces are proposed and we would suggest this is covered within a site specific **Method Statement** secured by way of appropriate **Planning Condition**.
- 5.5.2 This approach allows the **Method Statement** to reflect final detail and materials and incorporate appropriate specifications.

5.6 Site Service Provision

- 5.6.1 Redevelopments of this size will require multiple service changes. These will involve making redundant/ safe the existing site services and new service provision.
- 5.6.2 Plans detailing the location of existing services are included within Appendix 6. Exact detail on service removal and installation methods is not yet known but there are likely to be requirements for hand digging within the RPA areas of retained trees T52, T53 & T54 as well as T106, T107, T108 & T109.
- 5.6.3 It is proposed that detail relating to the form and method of this service installation is secured by way of **Planning Condition** and when exact detail on removal/ installation methods is known this can be addressed within a site specific **Method Statement**.





Existing site service runs (redundancies) shown on the left with proposed on the right. No new services within this area delivering an improvement on the current position.



5.7 Ground Level Changes

5.7.1 We have not been provided with detail relating to proposed level changes within existing tree RPA's. Most trees are located to the edge of the proposal and as such levels are likely to remain similar to tie in with external boundary levels.

5.8 Tree Shading of Proposal

- 5.8.1 The predominant shading issues will be for the lower ground floor/ lower level flats in proximity to T52, T53, T54 and T106, T107, T108 & T109.
- 5.8.2 The proximity of these trees to the highway and proposal is such that cyclical pruning regimes are envisaged. The trees are mature and as such there is unlikely to be an increase in shading.
- 5.8.3 We would envisage that the regular cyclical pruning and associated privacy provided by the retained trees in these areas is unlikely to lead to pressure to remove them based on shading issues.



5.9 Demolition & 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. Prior to this, and in the event any demolition works are to be undertaken we would advise that hoarding/ tree protective fencing is installed prior to any demolition activities.
- 5.9.2 Basic checks will be required following planning being achieved to ensure that protective fencing remains intact and ensure the proposed works close to trees are completed in accordance with the finalized report. Any unforeseen issues can also be identified and discussed before damage to the trees occurs. It is likely this approach will be secured by way of **Planning Condition**.
- 5.9.3 Following each visit a formal record is sent to the Local Authority to allow formal discharge of the planning condition. The scale of tree retention on this development is such that 5 visits are likely. One at the start to check fencing is of the correct specification and is in place, further checks for the duration of works before a final 'sign off' visit.

Visit Detail	Date	Status
Pre-commencement Inspection Attend site to inspect type and location of tree protection prior to demolition works commencing and discuss any issues associated with enabling works/ proposal with site manager	ТВС	Incomplete



Construction Phase Inspection Attend site to inspect type and location of tree protection (construction phase) and verify it remains in place. Tool box talk with operatives who will undertake any landscaping/ surfacing or service installation works within RPA's. Discuss any issues and provide interim update to planning file/ tree officer.	ТВС	Incomplete
Construction Phase Inspection Attend site to inspect type and location of tree protection and verify it remains in place. Tool box talk with operatives who will undertake any landscaping/ surfacing or service installation works within RPA's. Discuss any issues and provide interim update to planning file/ tree officer.	ТВС	Incomplete
Construction Phase Inspection Attend site to inspect type and location of tree protection and verify it remains in place. Tool box talk with operatives who will undertake any landscaping/ surfacing or service installation works within RPA's. Discuss any issues and provide interim update to planning file/ tree officer.	ТВС	Incomplete
Site Inspection Final site visit to confirm that no damage has been done to retained trees/ identify any remedial actions in the event damage has occurred. Assess any required tree surgery following construction.	ТВС	Incomplete



Appendix 1 – BS5837 Survey Key

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

Tree No.	Species DBH No of Ht Crown Spread BS Cat		Species	Age Class	Life Expect	Cr Ht	Observation	Recommendations	RPR (m)						
					N	E	S	W			·	(m)			
Т8	Willow (Weeping)	0.91	1	15.4	5.7	6	7	9.5	U	Mature	<10	1.4	Lapsed pollard with extensive decay in upper branches.	Remove	10.9
Т9	Plane (London)	0.7	1	22	10	8	8	6	B2	Mature	> 40	2	Visually prominent. Level drop on Eastern side at 1.5m.	Remove to facilitate development	8.4
T10	Maple (Field)	0.34	M/S	7	1.6	2.3	3.5	6	U	Early- mature	<10	1	Position is such that it cannot be retained adjacent to wall (which is already cracking). Suppressed and below T9.	Remove	4.1
T11	Hawthorn	0.23	1	7	4	2	2.5	3.6	C1	Mature	20 to 40	1.7	Visually insignificant to wider amenity and located 0.2m from wall.	Remove to facilitate development	2.8



Tree No.	Species	DBH (m)	No of Stems	Ht (m)	N	Crowr	n Spread S	w	BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T12	Cherry	0.4	1	4.2	5	5	5	2	U	Mature	<10	1.9	Top graft specimen with poor overall form and decay evident. Stem exudates.	Remove	4.8
T13	Dogwood	0.28	M/S	6	4.6	3.2	4.4	5	U	Mature	<10	2	In direct physical contact with adjacent wall. Could not self-support.	Remove	3.4
T14	Acer	0.28	M/S	6	3.3	3.5	4.4	2.7	C2	Mature	10 to 20	1.7	Established shrub/ tree.	Remove to facilitate development	3.4
T15	Laurel (Cherry)	0.2	M/S	6	2.7	3.5	3	2.5	U	Mature	<10	1.5	Shifted on root plate with exposed surface roots.	Remove	2.4
T16	Elm	0.58	1	22.5	8.8	9	8.9	4.5	B1	Mature	20 to 40	2.5	Minor stem crack. Unusual in that it has survived DED.	Remove to facilitate development	7



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(111)			
T17	Cherry	0.26	1	8	2.5	4.4	4.5	1.7	U	Mature	<10	2	Decay in main stem. Thinning canopy.	Remove	3.1
T18	Cherry	0.27	1	8	5.6	6	2.3	3.7	U	Mature	<10	1	Suppressed, surface roots. Stem exudates and thinning crown.	Remove	3.2
T19	Ash	0.16	1	10	2.3	2.4	2.4	2.4	U	Mature	<10	2.5	Located immediately adjacent to retaining wall and as such retention value must be considered minimal when combined with significant growth potential.	Remove	1.9
T20	Ash	0.2	1	8	3	2.6	3.2	2	U	Early- mature	<10	2	In severe decline.	Remove	2.4
T21	Ash												Removed at time of survey.	Removed	0



Tree No.	Species	DBH (m)	No of Stems	Ht (m)			ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T22	Ash	0.33	1	12	6.8	4.6	3.1	6	C1	Early- mature	20 to 40	2.5	Poor form with multiple stem bark expansion splits. Damaging adjacent footpath.	Remove to facilitate development	4
T23	Tree of Heaven	0.35	1	12.5	3	4.9	3.7	4	U	Early- mature	<10	1	Proximity to building means this tree cannot be considered one for long term retention.	Remove	4.2
T24	Ash	0.34	1	12	7.2	5.2	7.2	8	C1	Early- mature	20 to 40	1.8	Thinning of canopy indicates possible decline.	Remove to facilitate development	4.1
T25	Tree of Heaven	0.23	M/S	11	3.3	3.4	3.5	4	U	Early- mature	<10	0.3	Poor form and proximity to building is such it cannot be considered for long term retention.	Remove	2.8
T26	Ash	0.34	1	10	6.2	4.4	4.8	8.4	B1	Young	<10	1.8	Some previous branch loss. Sits in perched position in terms of levels.	Remove to facilitate development	4.1



Tree No.	Species	DBH (m)	No of Stems	Ht (m)			ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T27	Ash	0.15	M/S	8	3.5	2.8	S 1.9	1	U	Young	<10	0.3	Self-set and location is such it cannot be retained. Fence included in stem. Included unions.	Remove	1.8
T28	Lime	0.41	1	14	5.4	5.3	5.5	5.7	A1	Mature	> 40	2	Epicormic growth at base and recent low branch pruning.	Remove to facilitate development	4.9
T29	Cypress (Leyland)	0.3	1	16	3	2.7	3.6	2.6	U	Mature	<10	0.3	Very close to adjacent building necessitating removal.	Remove to facilitate development	3.6
T30	Lime	0.5	1	16.5	5.4	7	5.6	6	B1	Mature	<10	2.3	2 inclusions on main stem with branches very close to existing building.	Remove to facilitate development	6
T31	False Acacia												Removed	Removed	0



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(111)			
Т32	Maple (Norway)	0.35	1	13	5.4	6	5	5.2	U	Mature	<10	3	Chain link fence included in to main stem. Major included union at 0.6m.	Remove	4.2
Т33	Maple (Norway)	0.43	1	14	6.2	5	6.2	5.7	U	Mature	<10	1.8	Major lower stem damage with exposed internal wood.	Remove	5.2
T34	Maple (Norway)	0.44	1	13	4.4	5.6	5.8	4.7	C1	Mature	20 to 40	2	Canopy showing signs of decline. Stem decay at 1m.	Remove to facilitate development	5.3
T35	Sweet Chestnut	0.38	1	9	4.1	4	4.3	4.4	C1	Mature	20 to 40	1.7	Epicormic growth with stunted overall growth. Dieback and deadwood evident. Stem decay at 0.5m.	Remove to facilitate development	4.6
T36	Maple (Norway)	0.39	1	13	6	6.2	7	6	C1	Mature	20 to 40	1.6	Basal wounds x2 and included unions within canopy.	Remove to facilitate development	4.7



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(111)			
Т37	Ash		1										Removed	Removed	0
T38	Ash	0.18	M/S	16	5.7	4.3	2.4	5.3	U	Mature	<10	1	lvy covered; included unions and proximity to property mean it should be removed.	Remove	2.2
Т39	Lime	0.3	1	11	3. 7	4.4	4.5	3.9	B2	Matur e	> 40	1.7	Epicormic growth and some basal stem damage.	No works	3.6
T40	False Acacia	0.41	1	7	2	4.8	5.6	4.4	U	Mature	<10	2	Stem defects in terms of wounds and burrs. Canopy dieback with branch loss.	Remove	4.9
T41	Poplar	0.51	1	22	6.	2.8	5.6	4.4	C2	Matur e	20 to 40	3	Asymmetrical form. Included unions at major branch division. Damage to surface roots. 2.7m from building.	No works	6.1



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	Spread		BS Cat	Age Class	Life Expect	Cr Ht	Observation	Recommendations	RPR (m)
					N	E	S	W				(m)			
T42	Ash	0.43	1	15	5.3	6	5.5	6	C2	Mature	20 to 40	3	Within concrete. History of previous pruning to lower branches.	Remove to facilitate development	5.2
T43	Cherry	0.43	1	11	3.8	3	5	5.5	U	Mature	<10	1.7	Severe lean and stem decay on main branch over footpath.	Remove	5.2
T44	Cherry	0.46	1	9	4.4	3.8	4.1	5.1	U	Mature	<10	1	Major stem cankers. Stem decay. Thinning crown.	Remove	5.5
T45	Ash	0.34	1	16.5	5	3.5	4.8	5	C2	Young	<10	4	Suppressed canopy. Surface root damage.	Remove to facilitate development	4.1
T46	Ash	0.43	1	19.2	7	5.3	7	4.8	C2	Mature	20 to 40	3	High canopy. Evidence of branch loss.	Remove to facilitate development	5.2



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T47	Ash	0.39	1	15.6	N 2	E 4	S 9	W 8	C2	Mature	20 to	2	Suppressed by building	Remove to facilitate	4.7
147	ASII	0.33	1	13.0	2	7	3	O	CZ	Wature	40	2	to North and leaning in to the road.	development	4.7
T48	Lime	0.44	1	12	4.7	4.3	4.3	5.3	B2	Mature	> 40	1	Epicormic growth at base. Generally good form.	Remove to facilitate development	5.3
T49	Plane (London)	0.46	1	15.6	6.3	5.9	7	6.7	A2	Mature	> 40	2	Good form.	Remove to facilitate development	5.5
T50	Ash	0.3	1	14.7	6.3	5.7	3	4.4	C1	Mature	20 to 40	2	Asymmetrical canopy spread. Evidence of canopy branch loss.	Remove to facilitate development	3.6
T51	Sycamore	0.46	1	13.6	4.3	4.7	5.7	4.7	U	Mature	<10	2	Major cavity with decay on main branch over public highway. Size of branch removal wound relative to stem is such that complete removal advised.	Remove	5.5



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crown	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T52	Plane (London)	0.54	1	16.5	6. 6	6.8	S 5.5	W 5.8	B2	Matur e	20 to 40	4	Some larger branches have been removed on road side. Slight lean.	No works	6.5
T53	Plane (London)	0.3	1	15	7	3.9	6	3.8	C1	Matur e	20 to 40	2	Suppressed by adjacent trees both of which would benefit from the removal of this tree in terms of their further development.	No works	3.6
T54	Plane (London)	0.59	1	17.4	10 .3	8.4	9.1	5.5	A2	Matur e	> 40	1.7	Generally of good form with some low branches over highway.	No works	7.1
T55	Ash	0.3	1	10.4	4.5	4.7	4	4.7	В2	Mature	20 to 40	3	Minor deadwood.	Remove to facilitate development	3.6
T56	Ash	0.32	1	12	4.5	7	5.7	5.1	B2	Mature	20 to 40	3.5	Pruning wounds on southern side of stem.	Remove to facilitate development	3.8



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	n Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(111)			
T57	Ash	0.36	1	12.7	4.5	7	5.6	5.1	B2	Mature	20 to 40	2	Some damage to surface roots.	Remove to facilitate development	4.3
T58	Ash	0.3	1	12	5	5.7	5.4	5.1	B2	Mature	20 to 40	1	Quite significant mower damage to surface roots.	Remove to facilitate development	3.6
T59	Sycamore	0.89	1	19.6	10.	9	9	7.7	U	Mature	<10	2	Major basal cavity necessitates removal.	Remove	10.7
T60	Tree of Heaven	0.43	1	14	5.2	4.5	6	5.8	C1	Mature	20 to 40	2	Slight thinning of canopy and minor tip dieback.	Remove to facilitate development	5.2
T61	Lime	0.49	1	16	5.1	4.5	5.9	5.8	B2	Mature	> 40	2	Slightly stunted foliage for species. Surface root damage.	Remove to facilitate development	5.9



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(111)			
T62	Cherry	0.31	1	9	5.3	4.4	4	4.6	U	Mature	<10	1.7	Significant dieback and dog damage low on stem.	Remove	3.7
T63	Cherry	0.18	1	7	3.3	3	3	3.5	U	Early- mature	<10	1.7	Included union at 1.8m. Dieback.	Remove	2.2
T64	Cherry												Removed	Removed	0
T65	Lime	0.4	1	15	4.1	4.5	5.5	5.9	B2	Mature	> 40	1.6	Slight stunting of foliage but generally a good tree.	Remove to facilitate development	4.8
T66	Lime	0.38	1	14	4	4.4	2.9	4.6	B2	Mature	> 40	2	Generally good form.	Remove to facilitate development	4.6



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	n Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(m)			
Т67	Lime	0.35	1	12	4.2	4.5	2.8	3.8	U	Early- mature	<10	1.5	Major basal and stem wounds/ defects with decay evident.	Remove	4.2
T68	Sycamore												Removed	Removed	0
Т69	Ash	0.28	1	9.8	2.5	2.3	4	4	C2	Mature	20 to 40	2	Leaning and with low branches over highway.	Remove to facilitate development	3.4
T70	Ash	0.23	1	9.5	3.5	4	4.2	2.7	C2	Mature	20 to 40	2	Slight lean and girdling of surface roots.	Remove to facilitate development	2.8
T71	Cypress (Lawson)	0.25	1	10	1.5	1.5	1.5	1.5	U	Early- mature	<10	1.3	4 stems. Too close to building for retention.	Remove	3



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				(111)			
T72	Unknown												Removed	Removed	0
T73	Sycamore	0.26	1	13	4.4	1.8	2.8	3.2	U	Mature	<10	3	Self-set tree too close to building.	Remove to facilitate development	3.1
T74	Juniper	0.17	1	7	1.5	1.5	1.5	1.5	U	Mature	<10	0.2	Leaning and canopy beginning to split out.	Remove to facilitate development	2
T75	Lime	0.34	1	11.7	5.4	4.8	4.7	6.2	B2	Mature	> 40	1	Stem lean.	Remove to facilitate development	4.1
T76	Lime	0.2	1	7	4	2.1	2.8	3.8	U	Early- mature	<10	1.7	Ring barked and 3/4 dead.	Remove	2.4



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)
T77	Lime	0.34	1	12	N 5	4.2	\$ 4.2	W 5	B2	Mature	> 40	1	Recent damage to canopy branches, some girdling of roots evident.	Remove to facilitate development	4.1
T78	False Acacia	0.45	1	10.5	4.5	3.7	3.7	4.5	U	Mature	<10		In decline.	Remove	5.4
T79	Lime	0.24	1	10.7	3.9	4	4	3.8	U	Young	<10		Ring barked.	Remove	2.9
T80	Lime	0.4	1	13	6.4	3.4	4.3	6.3	C2	Mature	10 to 20	0.6	Major stem lean and some damage to surface roots.	Remove to facilitate development	4.8
T81	Maple (Norway)	0.24	1	9	3.6	2.7	2.6	3	U	Early- mature	<10	2	Dieback, major stem wound.	Remove	2.9



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	Е	S	W							
T82	Lime	0.3	1	12	3.8	4.7	4	4.9	C2	Mature	<10	1.8	Recent root damage.	Remove to facilitate development	3.6
T83	Lime	0.34	1	14.8	3.8	4.7	4	4.9	U	Mature	<10	1.6	Major basal wound and recent root disturbance.	Remove	4.1
T84	Lime	0.34	1	14.8	4.7	5.2	5.5	5.5	C2	Mature	20 to 40	1.7	Basal wounds but minimal decay.	Remove to facilitate development	4.1
T85	Lime	0.37	1	15.8	4.8	4.8	3.4	3	C2	Mature	20 to 40	1.8	3.7m from building. Basal decay.	Remove to facilitate development	4.4
T86	Ash	0.45	1	12	6	5	4.6	4	U	Young	<10	1.5	Poor location, hit doling of roots, canopy damage.	Remove	5.4



Tree No.	Species	DBH (m)	No of Stems	Ht (m)			ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T87	Ash	0.41	1	15	N 5	4.4	S 3.8	4.7	C2	Mature	20 to 40	3	Surface rooting and located within hard standing.	Remove to facilitate development	4.9
T88	Foxglove Tree	0.26	1	7.9	3	2.5	4.8	3.6	C2	Matur e	<10	1.5	Slightly asymmetrical canopy.	No works	3.1
T89	Ash	0.28	1	12	3	2.2		4.6	C2	Matur e	20 to 40	3	Some damage to surface roots.	No works	3.4
Т90	Ash	0.41	1	15	6. 2	7	8.7	6.6	В2	Matur e	20 to 40	2	Services and street lamp within RPA. Damage to surface roots.	No works	4.9
T91	Plane (London)	0.65	1	18.6	7. 2	8.5	8.6	7.6	B2	Matur e	> 40	1.6	Under cyclical crown reduction regime. Generally good form.	No works	7.8



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T92	Ash	0.48	1	15.5	7. 6	7	8	6.6	B2	Matur e	20 to 40	2	Minor canopy dieback but otherwise of good form. Subject to cyclical reduction.	No works	5.8
Т93	Maple (Norway)	0.29	1	12	4. 7	6.1	5.2	5.1	B2	Matur e	20 to 40	1.7	Generally ok form and structure.	No works	3.5
Т94	Maple (Norway)	0.41	1	16	7. 4	6.8	7	6.9	C1	Matur e	20 to 40	2	Surface root dame. 2m stem lesion. Basal wound.	No works	4.9
T95	Sycamore	0.29	1	11.1	2.6	3	4.6	4.5	U	Mature	<10	2	Major stem damage.	Remove	3.5
Т96	Ash	0.33	1	14	5.2	7	4	2.3	U	Mature	<10	3.5	Suppressed and with stem lean. Could not exist without shelter from building.	Remove	4



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	ı Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	Е	S	W							
Т97	Ash	0.19	1	14.2	1.6	3.4	2.2	2.4	U	Mature	<10	3	Drawn suppressed specimen.	Remove	2.3
Т98	Ash	0.14	1	10	1.4	5.2	2.8	1	U	Early- mature	<10	2	Completely 1 sided. Basal damage.	Remove	1.7
T99	Lime	0.38	1	13	4.6	4	5	4.8	B2	Mature	> 40	1.8	Ivy covered lower stem which hinders full inspection. Close to building.	Remove to facilitate development	4.6
T100	Maple (Norway)	0.34	1	13	6.8	6	4	5.2	C2	Mature	20 to 40	2	Slightly suppressed form but generally ok.	Remove to facilitate development	4.1
T101	Willow (Weeping)	0.46	1	12	8.3	9.8	6.8	6	C2	Mature	10 to 20	1.6	In raised planter.	Remove to facilitate development	5.5



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W				(m)			
T102	Ash (Raywood)	0.27	1	14	5.7	5.5	5	4	C1	Mature	10 to 20	5	Drawn specimen close to building.	Remove to facilitate development	3.2
T103	Ash (Raywood)	0.12	1	8	2	0.3	0.7	1.2	U	Young	<10	4	Poor form, struggling to establish.	Remove	1.4
T104	Ash (Raywood)	0.25	1	17	6.7	5.4	1.2	4.8	U	Mature	<10	5	Poor overall drawn form and cannot be retained in current location.	Remove	3
T105	Ash (Raywood)	0.2	1	14	3.3	3.4	4	2.8	U	Mature	<10	4.5	Poor asymmetric form and cannot be retained in current position.	Remove	2.4
T106	Plane (London)	0.74	1	17	11 .5	10. 4	10.5	11	B2	Matur e	> 40	1.6	Exposed surface rooting and close to wall. Generally ok.	No works	8.9



Tree No.	Species	DBH (m)	No of Stems	Ht (m)			spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T107	Plane (London)	0.59	1	17	5. 2	10	S 6.5	W 4.7	B2	Matur e	> 40	3.5	Near boundary wall and slight asymmetry.	No works	7.1
T108	Plane (London)	0.52	1	17	3. 6	9	5.8	7.2	B2	Matur e	> 40	3.5	Subject to previous pruning. Stem wound.	No works	6.2
T109	Plane (London)	0.53	1	17	4. 7	8.2	7.7	7.8	B2	Matur e	> 40	3	Cavity on main stem. Asymmetric canopy.	No works	6.4
T110	Fastigiate Beech x4												Now TG5	-	0
T111	Sycamore												Removed	Removed	0



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	າ Spread		BS Cat	Age Class	Life Expect	Cr Ht	Observation	Recommendations	RPR (m)
					N	E	S	W				(m)			
T112	Sycamore												Removed	Removed	0
T113	Sycamore												Removed	Removed	0
T114	Sycamore												Removed	Removed	0
T115	Sorbus	0.15	1	2.5	1	1	1	1	C1	Early- mature	10 to 20	1.6	Poor quality street tree planting outside site boundary	No works	1.8
T116	Sorbus	0.15	1	2.5	1	1	1	1	C1	Early- mature	10 to 20	1.6	Poor quality street tree planting outside site boundary	No works	1.8



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	າ Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
T117	Sycamore	0.2	1	8	N 2.1	E 3	S 2.6	1.8	C1	Young	20 to 40	1.6	Self-set tree suppressed by T8. Close to wall. Included union at 2.3m.	Remove to facilitate development	2.4
T118	Ash	0.12	1	7	1.8	1.6	1.8	1.8	C1	Young	20 to 40		Self-set and drawn stem.	No works	1.4
T119	Ash	0.18	1	8.6	3	3	3	3	U	Early- mature	<10	1	Self-set tree too close to building for retention.	Remove	2.2
T120	Cypress	0.25	1	8	3	3	3	3	C1	Early- mature	<10	1	Poorly located for retention 2.8m from building.	Remove to facilitate development	3
T121	Apple	0.14	1	4.5	3	4	3	2	U	Mature	<10	1	Too close to building for retention.	Remove	1.7



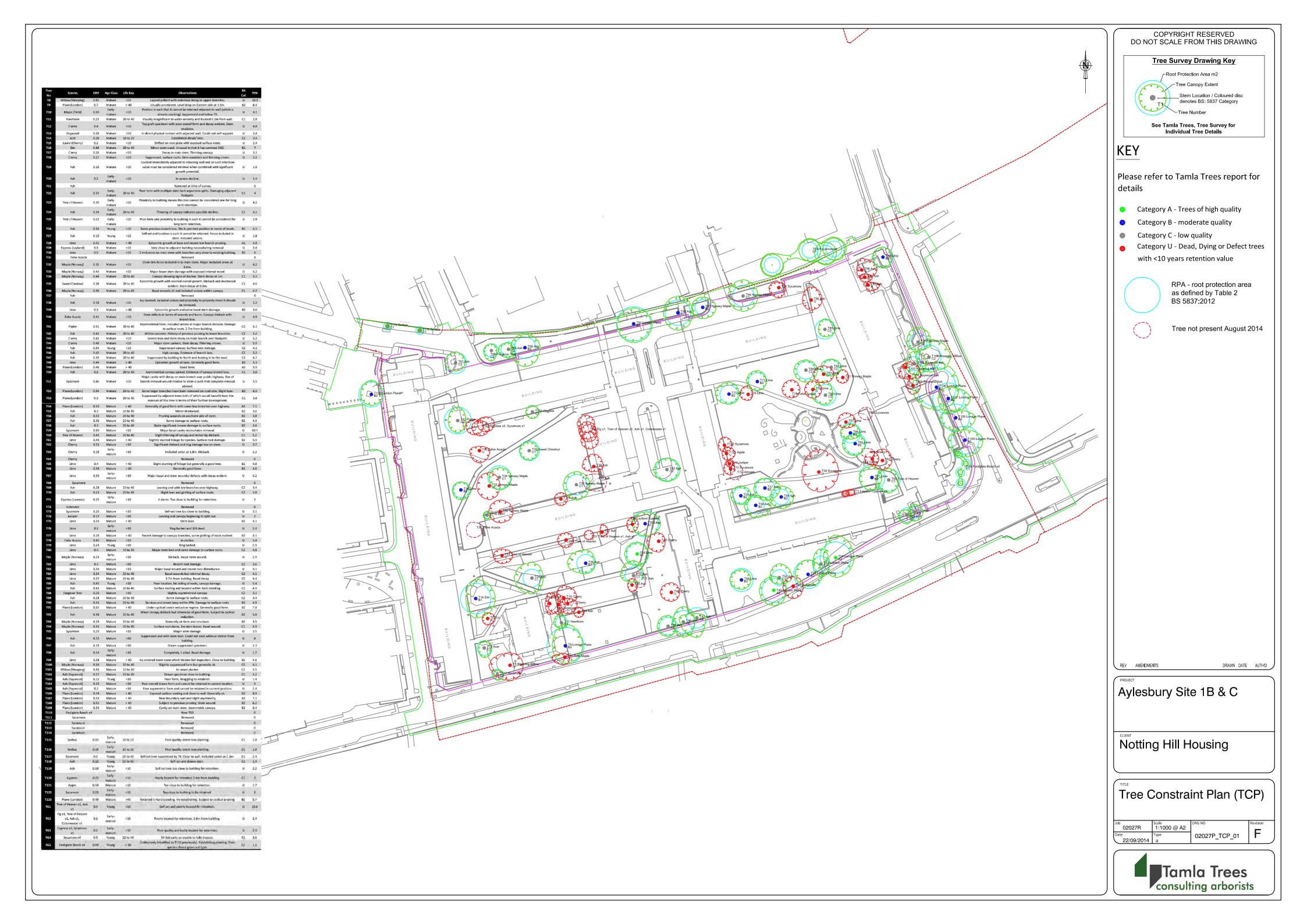
Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crown	Spread		BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	Е	S	W							
T122	Sycamore	0.25	1	8.5	3.8	3.6	3	2.8	U	Early- mature	<10	1.8	Too close to building to be retained.	Remove	3
T123	Plane (London)	0.48	1	9.8	6.4	5.2	5	5	B2	Mature	>40	2.6	Retained in hard standing. Ivy establishing. Subject to cyclical pruning	No Works	5.7
TG1	Tree of Heaven x1, Ash x1	0.9	1	7	2.2	2.2	2.2	2.2	U	Young	<10	0.3	Self-set and poorly located for retention.	Remove	10.8
TG2	Fig x1, Tree of Heaven x1, Ash x1, Cotoneast er x1	0.2	1	8	4	4	4	4	U	Early- mature	<10	1	Poorly located for retention. 2.6m from building.	Remove	2.4
TG3	Cypress x2, Sycamore x1	0.2	1	13	3	4	4	4	U	Early- mature	<10	1.6	Poor quality and badly located for retention.	Remove	2.4



Tree No.	Species	DBH (m)	No of Stems	Ht (m)		Crowr	n Spread		BS Cat	Age Class	Life Expect	Cr Ht	Observation	Recommendations	RPR (m)
		(,		(,	N	E	S	W		5.0.00		(m)			(,
TG4	Sycamore x4	0.3	1	14	5	5	5	5	C1	Young	20 to 40	2	3rd party so unable to fully inspect.	No works	3.6
TG5	Fastigiate Beech x4	0.09	1	4.9	0.7	0.7	0.7	0.7	C2	Young	> 40	0.5	(Collectively identified as T110 previously). Establishing planting. Poor species choice given soil type.	Remove to facilitate development	1.1



Appendix 3 - Tree Constraints Plan





Appendix 4 - Tree Removal Plan



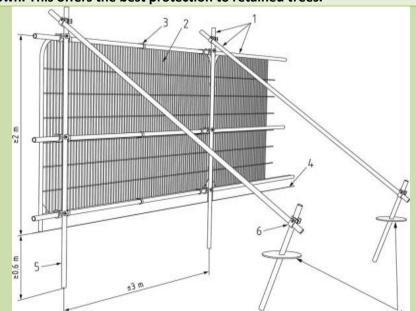


Appendix 5 - Tree Protection Plan

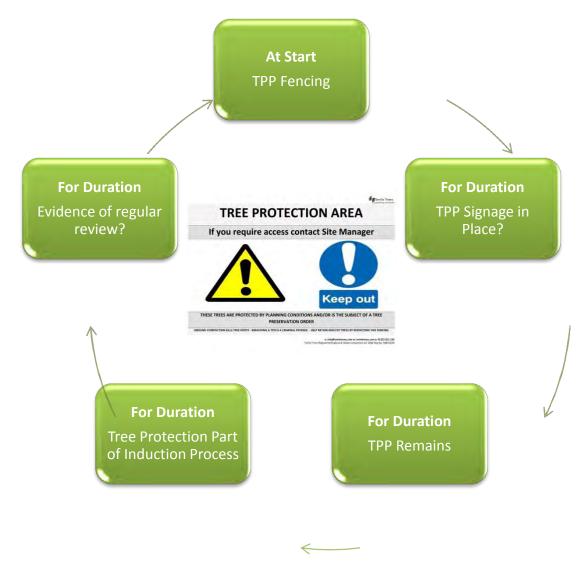
Tree protection is essential to successfully integrate the proposal into the surrounding trees. It is designed to manage the impact on the underlying soil and rooting environment. It must therefore be installed prior to any further site activity. Even apparently minimal tracking of the soil near trees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

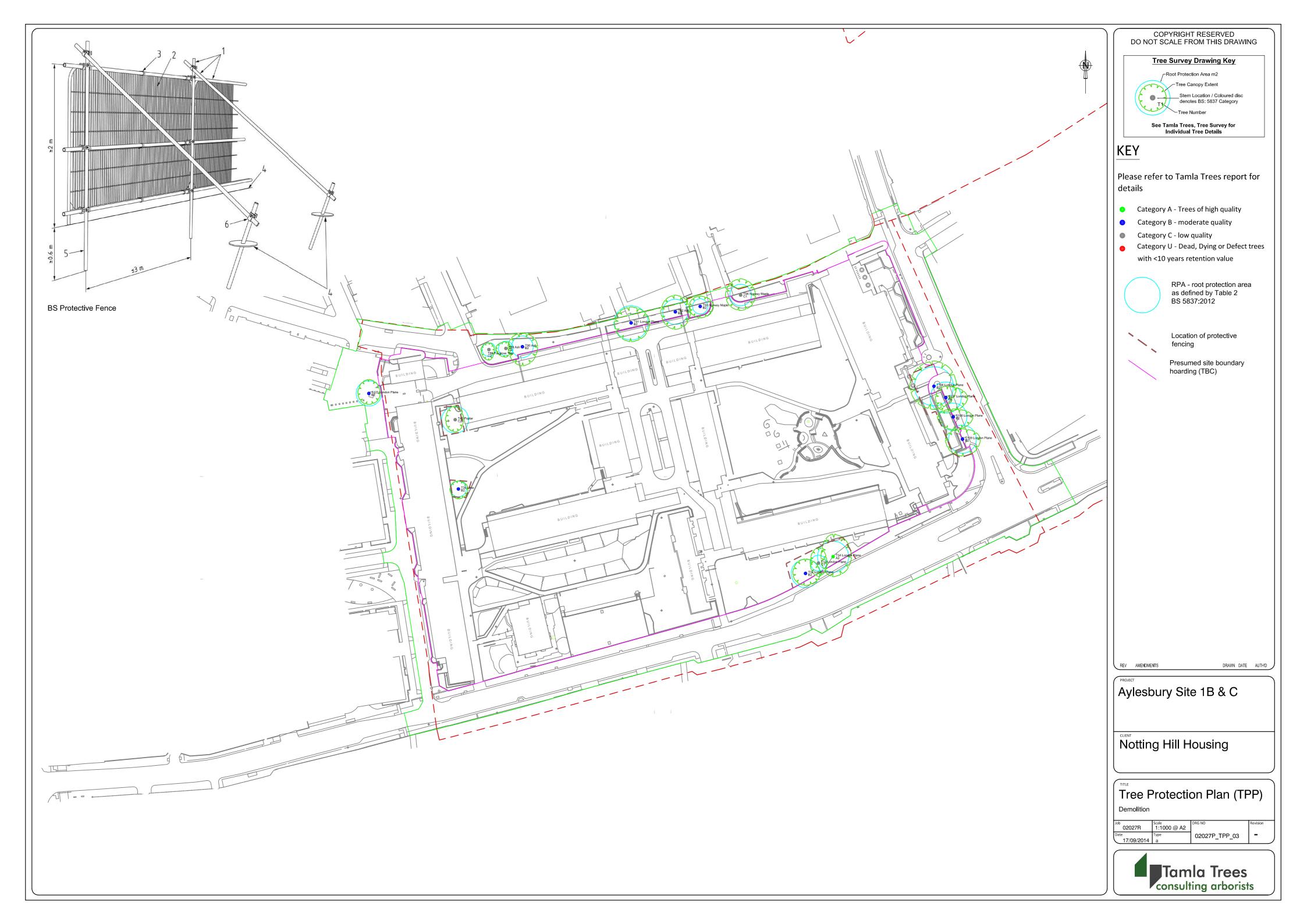
All our fencing specifications accord with advice and guidance within BS 5837. Modifications to fence types are possible but should be discussed prior to implementation. In all other instances the form detailed below should be shown. This offers the best protection to retained trees.

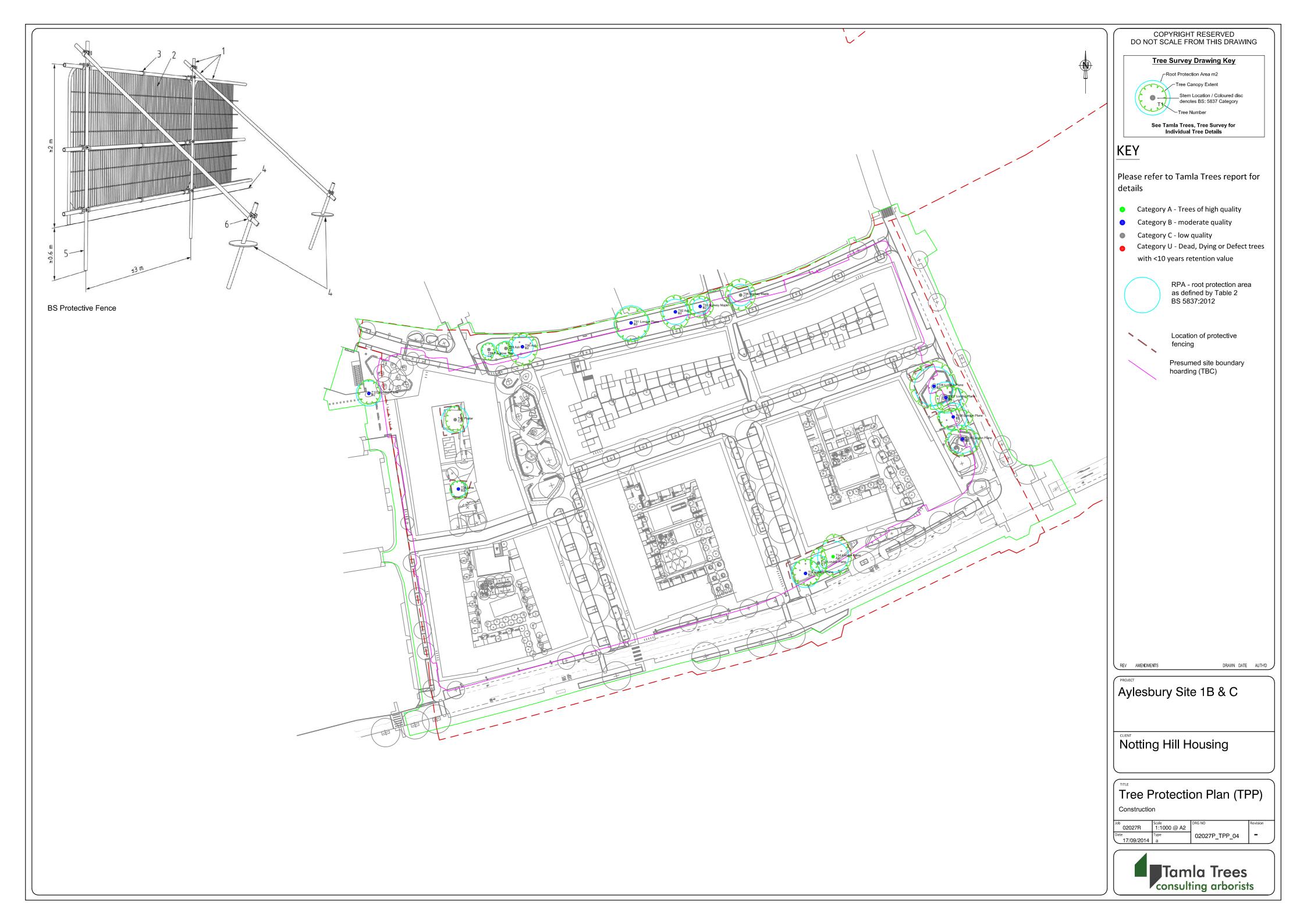
- All tree protection must be in place prior to any site activities. It is recommended that this fencing is installed prior to any site works (including demolition).
- To be effective Tree Protection must remain in place for the duration of the development and form part of the site induction process.
- The location of internal fencing is shown as the full BS spec (right) with external site hoarding used to offer additional protection to those trees which can be fenced outside the development area.
- The warning signs (provided separately to A3 size with this report) should be fixed at 6/10m m intervals to raise awareness of the fencing and its desired function.
- 2 x Plans Demolition and Construction











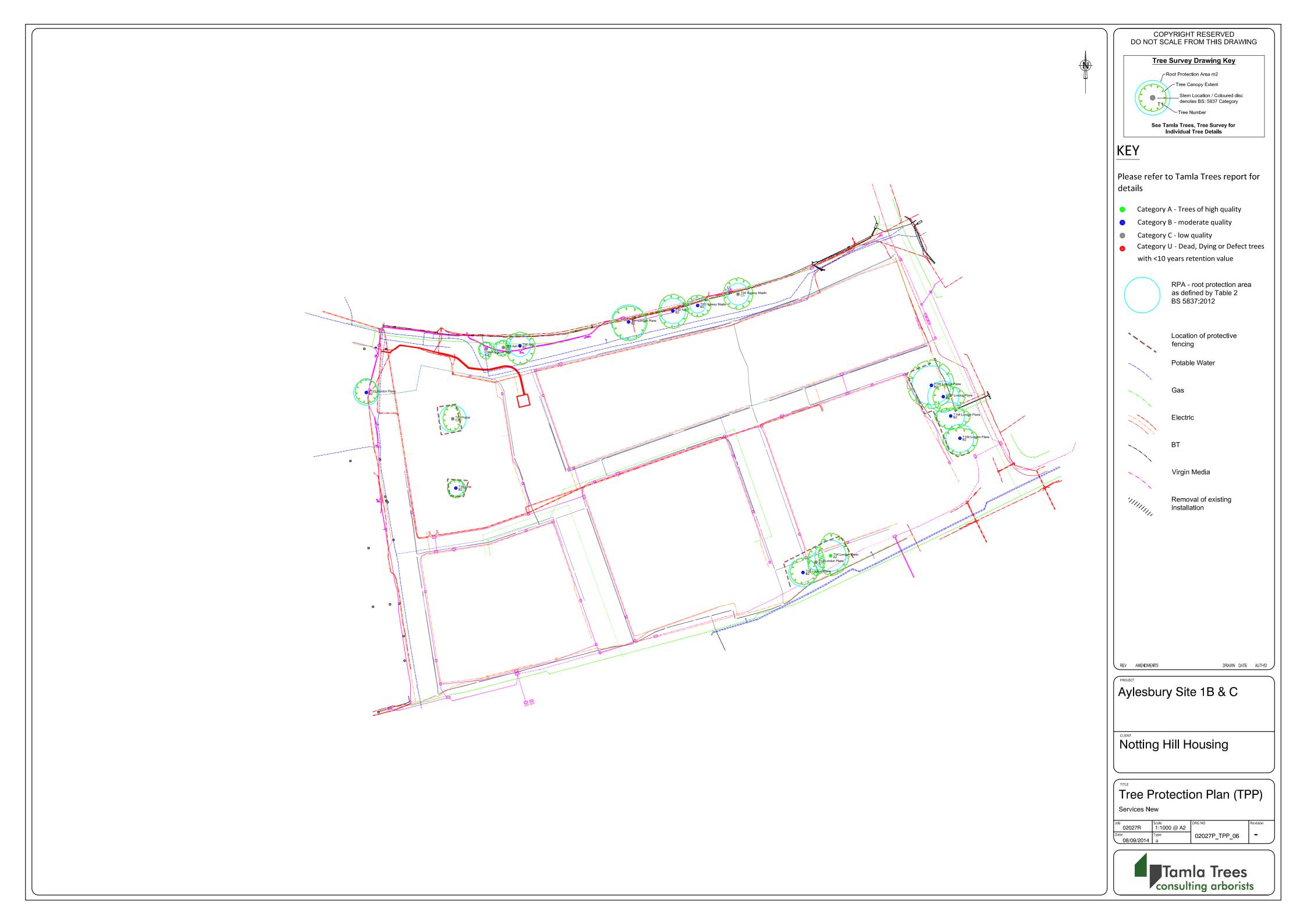


Appendix 6 – Site Services

2x Plans detailing service redundancies and known service installations

Full detail on service removal and installation not yet available. Detail to be provided by site specific Method Statement subject to appropriate Planning Condition







Appendix 7 – Site Photographs



Image 1 – Retained trees T52, T53 & T54 visible to right





Image 2 – Basal stem of retained tree T41 showing proximity to building and levels. Protection prior to any on site demolition is required to successfully retain this tree



Image 3 – Stem bases of T108 & T107 – site supervision and hand working required to ensure surface roots are not damaged





Image 4 – Internal trees are generally of lower public amenity. Extreme canopy of retained Lime (T39) visible to left hand side