1-10 CAMPBELL CLOSE TWICKENHAM

TREE REPORT

(Tree survey and constraint advice)

ACD ENVIRONMENTAL

Ecology
Archaeology
Arboriculture
Landscape Architecture

FLETCHER CRANE ARCHITECTS LTD

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1.0 Executive Summary

1.1. This report provides survey information about the trees on the site at 1-10 Campbell Close, Twickenham, in accordance with the recommendations of BS5837:2012 Trees in relation to design, demolition and construction. This is to identify the quality and value of existing trees on site, allowing decisions to be made as to the retention or removal of trees in the case of any development.

1.2. There are forty-two trees included within the survey. Twenty-one of these were graded as category B and twenty as C. Additionally six groups and one hedgerow were recorded.

1.3. There is one individual category U tree on the site which could be removed as good arboricultural practice.

1.4. Trees of A and B category should be considered as constraints to development and every attempt should be made to incorporate them into any proposed development design. Trees of a category C and U will not usually be retained where they would impose a significant constraint to development. Category U trees are often in such a condition that they will be lost within 10 years, and may be removed as good arboricultural practice.

2.0 Introduction

2.1. ACD were instructed by Fletcher Crane Architects Ltd, in March 2016, to survey and categorize the trees at 1-10 Campbell Close, Twickenham in accordance with the British Standard[1], The survey includes all trees with a stem diameter greater than 75mm stem diameter at a height of 1.5m that are on site or close enough to pose a potential constraint to development.

2.2. Individual trees, groups of trees and hedges have been assessed for their quality and benefits within the context of proposed development. The quality of each tree, or group of trees has been recorded by allocating to it one of four categories. A tree reference plan is provided in order to assist with the design of site layouts.

2.3. This report provides the data and advice outlined in the British Standard only. It must not be substituted for a tree risk assessment. Detailed tree inspection including decay mapping, aerial inspection, soil analysis, etc. was not undertaken. If further detailed inspection is deemed necessary, then it will be made clear within this report.

2.4. Richmond Borough Council have confirmed that there are no tree preservation orders relevant to this site.

2.5. The Tree Reference Plan is based on the supplied topographical ground survey from Fletcher Crane Architects, dated 21st December 2015, ref: 081215/topo.

2.6. The controlling authority is London Borough of Richmond upon Thames, who can be contacted at: Civic Centre, 44 York Street, Twickenham, TW1 3BZ, Tel: 020 8891 1411.

2.7. Any questions relating to the content of this report should be directed in the first instance to: ACD Environmental, Courtyard House, Mill Lane, Godalming, Surrey GU7 1EY, 01483 425714, quoting the site address and report reference number.

[1] BSI, 2012. *BS5837 Trees in relation to design, demolition and construction- Recommendations,* London: British Standards Institute.

3.0 Scope and Method of Survey

3.1. The survey schedule can be found at Appendix 2.

3.2. The survey has been carried out following the recommendations of The British Standard and the trees are assessed objectively and without reference to any site layout proposals. Categories are based on each tree's health and condition, together with an assessment of its life expectancy if its surroundings were to be unchanged.

3.3. No discussions took place between the surveyor and any other party.

3.4. The reference numbers of surveyed trees and groups of trees are shown on the tree reference plan, which is appended to this report and based on the supplied survey drawing. The prefix G has been used to indicate a group of trees, and H for hedges. Stem locations within groups may be estimated, and indicative of canopy only.

3.5. The tree survey was carried out from ground level only, with the aid of binoculars as necessary, following the VTA tree assessment method[2].

3.6. Where trees are located on neighbouring land an estimated appraisal has been made of their quality and dimensions. All estimated dimensions are noted in the schedule comments.

3.7. Where stems or branches are obscured by ivy or other materials a full assessment of those parts will not be possible.

3.8. Tree heights were measured with a clinometer, or estimated in relation to those measured with the clinometer. If individual tree heights are of particular concern, for example in shading calculations, then they are measured using a clinometer.

3.9. Trunk diameters were measured or, where inaccessible, estimated. Single stemmed trees are measured at 1.5m above ground level.

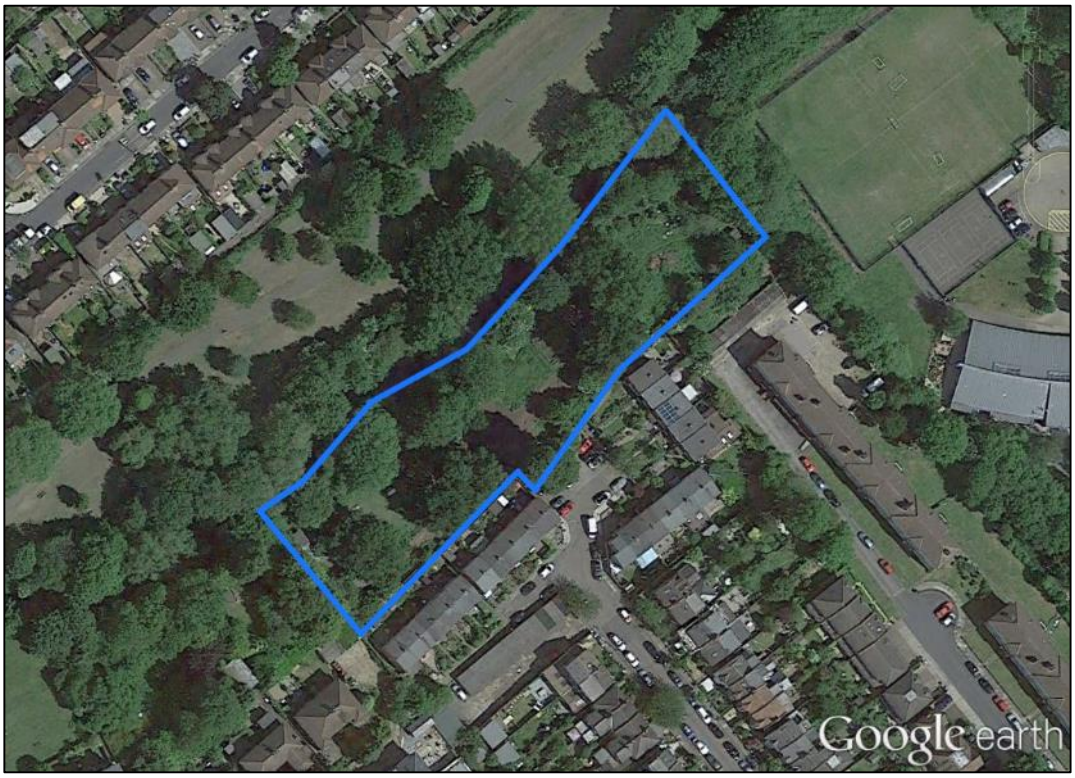
[2] Mattheck, C. & Breloer, H., 1998. *The Body Language of Trees: A Handbook for Failure Analysis.* London:H.M.S.O.

3.10. Tree canopies, where markedly asymmetrical, were measured (or estimated by pacing) in four directions using a laser measure. Symmetrical canopies are measured in one direction only, with dimensions in the remaining directions assumed to be similar. For the canopies of groups of trees, the maximum radius for each compass point is measured (more complicated groups will have further notes taken and an accurate representation will be shown on the plan).

4.0 Discussion

4.1. For individual details of the subject trees see the survey at appendix 2.

4.2. The site runs along the south-eastern edge of the River Crane and is currently used as an informal farm. The area surveyed covers approximately 0.5 hectares and can be seen ringed in blue on the aerial photograph below:



Courtesy of Google Earth

4.3. No soil assessment was carried out at the time of survey. According to the British Geological Survey online viewer, the bedrock geology is described as: London Clay Formation - Clay and Silt.

4.4. Twenty-one individual trees are category B: those that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and minor storm damage)

4.5. There are twenty individual trees, six groups and one hedgerow that are category C: either due to their low inherent value due to low overall physiological vigour, or structural faults, or their diameter is less than 150mm at 1.5m above ground level.

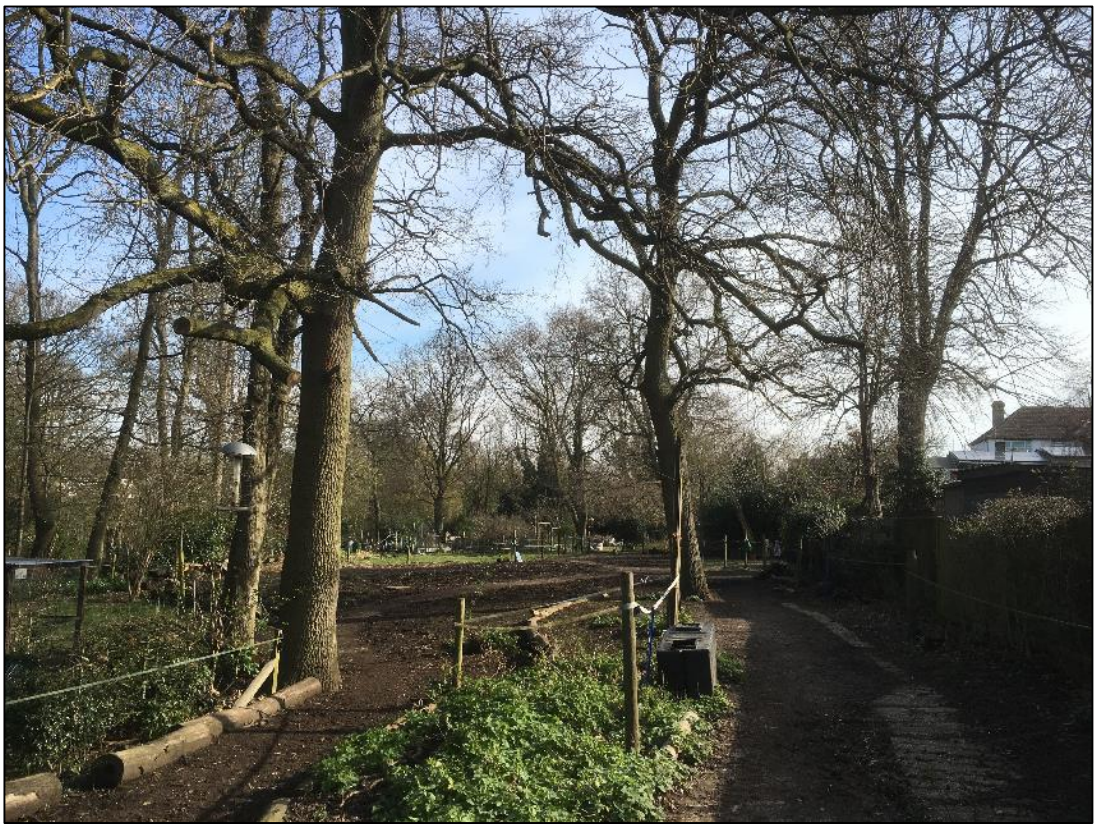
4.6. Where there are category C trees near the boundaries of the site, it is recommended that these are retained where they have landscape value as screening.

4.7. There is one individual category U tree on the site which could be removed as good arboricultural practice as part of any development.

4.8. The below ground constraints posed by the trees are represented by root protection areas (RPAs) and shown on the Tree Reference Plan. The RPA of a tree is calculated as advised by the British Standard. For a tree growing in an apparently unconstrained rooting environment a circular RPA is shown. When constraints to root growth appear to be present the RPA is adjusted to reflect the likely root growth pattern.

4.9. The following photographs provide an indication of current site conditions:

General view of entrance area



General view across site

5.0 Recommendations

5.1. Trees of category A and B should be considered as constraints to development and every attempt should be made to incorporate them into any proposed development design. Trees of a category C are of a low value and will not usually be retained where they would impose a significant constraint to development. Category U trees are in such a condition that they will be lost within 10 years, and may be removed as good arboricultural practice.

5.2. The British Standard states in section 5.1.1, that the constraints imposed by trees, both above and below ground should inform the site layout design, although it is recognized that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development, or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention. Attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.

5.3. If the retention of higher category tree would prejudice an otherwise satisfactory design, incorporating replacement planting may provide appropriate mitigation (space for replacement trees must be included within the layout).

5.4. Trees can be a development constraint both below and above the ground:

5.4.1. Below ground: root protection areas indicate an area that contains a minimum rooting volume to ensure the survival of the tree. This area of ground should be taken into account within the site layout, such that it can be left undisturbed during demolition and construction by excluding activity from the area using protective barriers.

5.4.2. Tree roots can be easily damaged through root severance. For example: the excavation required for level changes, or the laying of strip foundations. They can also be damaged inadvertently through soil compaction that causes asphyxiation of roots. These factors can lead to a decline in overall vigour, die back or even whole tree death.

5.4.3. Above ground: tree constraints presented by the canopy and the psychological effects of tree proximity to dwellings (such as shading, perceived threat of tree failure, etc.) must also be considered during layout design. This will involve optimising site layout and building room use to avoid the end-user becoming resentful of the trees, and seeking excessive pruning or even tree removal. This is especially a consideration with trees located on southern boundaries.

5.4.4. Preferably, conflicts between proposed structures and RPAs and tree canopies should be 'designed out' through the careful positioning of any built form. It is therefore advisable that any design layouts are drafted in close collaboration with ACD to ensure that any trees that are highlighted for retention can be realistically integrated into the design.

5.5. When a final layout is agreed, an arboricultural impact assessment (AIA) should be completed to discuss arboricultural issues within the scheme, and demonstrate to the Local Planning Authority the viability of the layout.

5.6. Surgery may be required in order to allow trees to be retained close to structures, to allow access for construction or for future site traffic, or in the interests of the future health and safety of the trees and users of the site. Detailed recommendations for surgery can be provided once a final site layout is agreed, and it is determined which trees are to be retained. All surgery should comply with BS3998[3] or more recently accepted arboricultural good practice.

5.7. Before any works start on site, including demolition, an arboricultural method statement (AMS) and tree protection plan (TPP) should be submitted, approved and implemented. There must be no changes in levels, service routing, machine activity, storage of materials or site hut positioning within the RPAs. The tree protection measures must remain in position for the duration of the construction process.

5.8. We recommend that a representative of ACD, or an alternative consultant acceptable to the local planning authority (LPA), monitor the tree protection measures throughout

[3] BSI, 2010. *BS3998- Recommendations for Tree Work,* London: British Standards Institute.

the development, and supervise any work within RPAs and approved protection areas.

5.9. Under the Hedgerows Regulations[4] it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Local planning authority permission is required before removing hedges that are at least 20 metres (66 feet) in length, more than 30 years old and contain certain species of plant. The authority will assess the importance of the hedgerow using criteria set out in the Regulations. Hedgerows in areas covered by a historic landscape characterisation are often protected on the basis of historic importance and their wildlife value.

5.10. A landowner has a duty of care[5] to ensure that reasonable steps are taken to ensure the safety of others entering their land. There is a special responsibility to ensure the safety of children, who may be unaware of danger. Reasonably frequent inspections of trees with potential to cause harm, by a competent person, together with implementation of any recommendations, should ensure compliance with the legislation regarding tree safety.

5.11. Notice must also be taken that it is an offence[6] to disturb a nesting bird or roosting/breeding bat. Further advice, particularly if bats are discovered during tree work should be obtained from ACD.

[4] Hedgerows Regulation 1997, SI No: 1160.
[5] Occupiers' Liability Act (1957 and 1984)
[6] Wildlife and Countryside Act (Anon., 2000) & Countryside and Rights of Way Act (Anon., 1981)

Appendix 1: Tree Categories Explained

BS5837:2012 Table 1 -**Cascade chart for tree quality assessment**			
Category and definition	**Criteria (including subcategories where appropriate)**		
Trees unsuitable for retention (see Note)			
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	*Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) *Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline *Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7.***		
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**
Trees to be considered for retention			
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

Appendix 2: Tree Survey Schedule

No.	Name	Ht (crown)	Dia (stems)	Crown spread (NESW)	Life stage	ERC	Comments & preliminary recommendations	BS Cat
T1	Tilia X europaea (Common Lime)	20(3)	970(1)	7, 6, 6, 7	M	20+	Tree was topped many years ago at 7m. Subsequently, the tree has regrown and formed a substantial crown. This new crown is cyclically reduced to suitable pollard points regularly at 18m. Where the tree was topped, decay pockets have formed. Tree has good value on the property frontage. Extensive suckering at base.	B1
T2	Crataegus monogyna (Hawthorn)	5(1)	150(1)	1, 1, 1, 1	SM	10+	Tree of limited quality and value.	C1
T3	Quercus robur (Common Oak)	20(2)	560(1)	8, 4, 6, 7	M	20+	Tree of good quality and value. Dead wood present in canopy. Tree has been cut back on south-eastern side.	B1
T4	Quercus robur (Common Oak)	22(2)	730(1)	7, 8, 10, 10	M	20+	Tree of good quality and value. Dead wood present in canopy. Canopy has been cut back on the south-eastern side.	B1
T5	Quercus robur (Common Oak)	20(2)	490(1)	7, 4, 4, 7	M	20+	Tree of moderate quality and value.	B1
G6	Corylus avellana (Hazel), Ilex aquifolium (Holly), Laurus nobilis (Bay), Prunus spinosa (Blackthorn), Sambucus nigra (Elder)	5(1)	200(1)	As indicated on plan	SM	10+	Mixed group of shrubs, of limited value individually.	C2
T7	Quercus robur (Common Oak)	18(2)	790(1)	8, 8, 8, 10	M	20+	Tree of good value, with minor mechanical damage at base.	B1
T8	Sambucus nigra (Elder)	3(1)	200(1)	1, 1, 1, 1	EM	10+	Tree of limited quality and value.	C1
T9	Crataegus monogyna (Hawthorn)	6(1)	200(1)	1.5, 1.5, 1.5, 1.5	EM	10+	Tree of limited quality and value.	C1

Notes: Dia (stems): trunk diameter in mm at 1.5m above ground level (number of stems) | HT (crown): Tree height in m (crown clearance in m) | Life stage: Y: Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). SM: Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). EM: Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). M: Mature (full height, crown spread, seed bearing; over 50% of attainable age.). OM: Over mature (full size, die-back, small leaf size, poor growth extension.).| FSB: First significant branch (& compass bearing) | ERC: Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.| BS Category: Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

No.	Name	Ht (crown)	Dia (stems)	Crown spread (NESW)	Life stage	ERC	Comments & preliminary recommendations	BS Cat
T10	Quercus robur (Common Oak)	12(2)	540(1)	7, 4, 5, 7	M	20+	Tree has significant lean over river, but has been reduced in height to 12m to compensate.	B2
T11	Ligustrum lucidum (Chinese Privet)	12(1)	350,350,350,350(4)	5, 5, 5, 5	M	20+	Multi-stemmed, rare tree of good value on river bank.	B2
T12	Fraxinus excelsior (Ash)	20(3)	660(1)	7, 7, 7, 7	M	20+	Tree of moderate quality and value.	B2
T13	Ligustrum lucidum (Chinese Privet)	12(1)	350, 350, 350, 350 (4)	5, 5, 5, 5	M	20+	Multi-stemmed, rare tree of good value on river bank.	B2
T14	Crataegus monogyna (Hawthorn)	5(1)	150(1)	1, 1, 1, 1	SM	10+	Tree of limited quality and value.	C1
T15	Crataegus monogyna (Hawthorn)	5(1)	150(1)	1, 1, 1, 1	SM	10+	Tree of limited quality and value.	C1
G16	Prunus avium (Wild Cherry)	5(1)	150(1)	1, 1, 1, 1	SM	10+	Group of self-sown trees.	C2
T17	Fraxinus excelsior (Ash)	20(3)	410, 280 (2)	5, 3, 7, 7	M	10+	Compression fork with included bark and weak union, reducing quality.	C1
T18	Fraxinus excelsior (Ash)	20(3)	470(1)	5, 5, 5, 5	M	10+	Tree of moderate value, but with occluded metal bar at base.	C1
T19	Quercus robur (Common Oak)	16(2)	380(1)	3, 3, 3, 1	M	10+	Tree is one sided, suppressed by neighbour. Horizontal wound on stem consistent with a wire constriction.	C1
T20	Fraxinus excelsior (Ash)	20(3)	520(1)	7, 2, 7, 7	M	20+	Tree of moderate value.	B2
T21	Fraxinus excelsior (Ash)	20(3)	410(1)	7, 3, 7, 2	M	10+	One large stem has been removed.	C1
T22	Sambucus nigra (Elder)	3(1)	250(1)	1, 1, 1, 1	EM	10+	Tree of limited quality and value.	C1

Notes: Dia (stems): trunk diameter in mm at 1.5m above ground level (number of stems) | HT (crown): Tree height in m (crown clearance in m) | Life stage: Y: Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). SM: Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). EM: Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). M: Mature (full height, crown spread, seed bearing; over 50% of attainable age.). OM: Over mature (full size, die-back, small leaf size, poor growth extension.).| FSB: First significant branch (& compass bearing) | ERC: Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.| BS Category: Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

No.	Name	Ht (crown)	Dia (stems)	Crown spread (NESW)	Life stage	ERC	Comments & preliminary recommendations	BS Cat
T23	Quercus robur (Common Oak)	15(2)	410(1)	5, 4, 6, 7	EM	10+	Tree has poor form and leans towards north.	C1
H24	Ilex aquifolium (Holly)	2(0)	100(1)	0, 0, 0, 0	SM	10+	Informal hedge.	C1
T25	Quercus robur (Common Oak)	20(3)	780(1)	7, 7, 9, 8	M	20+	Tree of good value on riverside. Dead wood present in crown.	B1
T26	Prunus avium (Wild Cherry)	3(1)	160(1)	1, 1, 1, 1	SM	10+	Tree of limited value due to size.	C1
T27	Quercus robur (Common Oak)	22(3)	810(1)	9, 8, 8, 8	M	20+	Vertical wound at base- not consistent with a crack. Good value tree.	B1
G28	Corylus avellana (Hazel)	3(0)	200(1)	1.5, 1.5, 1.5, 1.5	EM	10+	Trees of limited value.	C1
T29	Alnus glutinosa (Common Alder)	10(2)	280(1)	2.5, 2.5, 2.5, 2.5	EM	10+	Tree is damaging bank revetments.	C1
T30	Alnus glutinosa (Common Alder)	10(2)	350, 350, 300, 250, 200 (5)	5, 5, 5, 5	M	10+	Tree is damaging bank revetments. Multi-stemmed habit, reducing quality.	C1
G31	Malus (Apple)	2(1)	200(1)	1, 1, 1, 1	EM	10+	Apple trees of limited value.	C2
T32	Fraxinus excelsior (Ash)	10(2)	300(1)	5, 2, 3, 3	EM	10+	Tree is heavily suppressed reducing quality.	C1
T33	Fraxinus excelsior (Ash)	8(1)	350(1)	8, 3, 0, 3	EM	<10	Tree is leaning heavily to north-east, over neighbouring property.	U
T34	Fraxinus excelsior (Ash)	18(2)	310, 250 (2)	4, 2, 2, 7	EM	10+	Twin stemmed tree with fork at base. Suppressed tree.	C1
T35	Fraxinus excelsior (Ash)	20(2)	410(1)	8, 3, 4, 4	M	20+	Ivy clad tree restricting visual inspection. Tree of moderate value.	B1
T36	Fraxinus excelsior (Ash)	20(2)	360(1)	8, 4, 3, 4	M	20+	Ivy clad tree restricting visual inspection. Tree of moderate value.	B1
T37	Fraxinus excelsior (Ash)	20(2)	380(1)	4, 4, 5, 5	M	20+	Ivy clad tree restricting visual inspection. Tree of moderate value.	B1

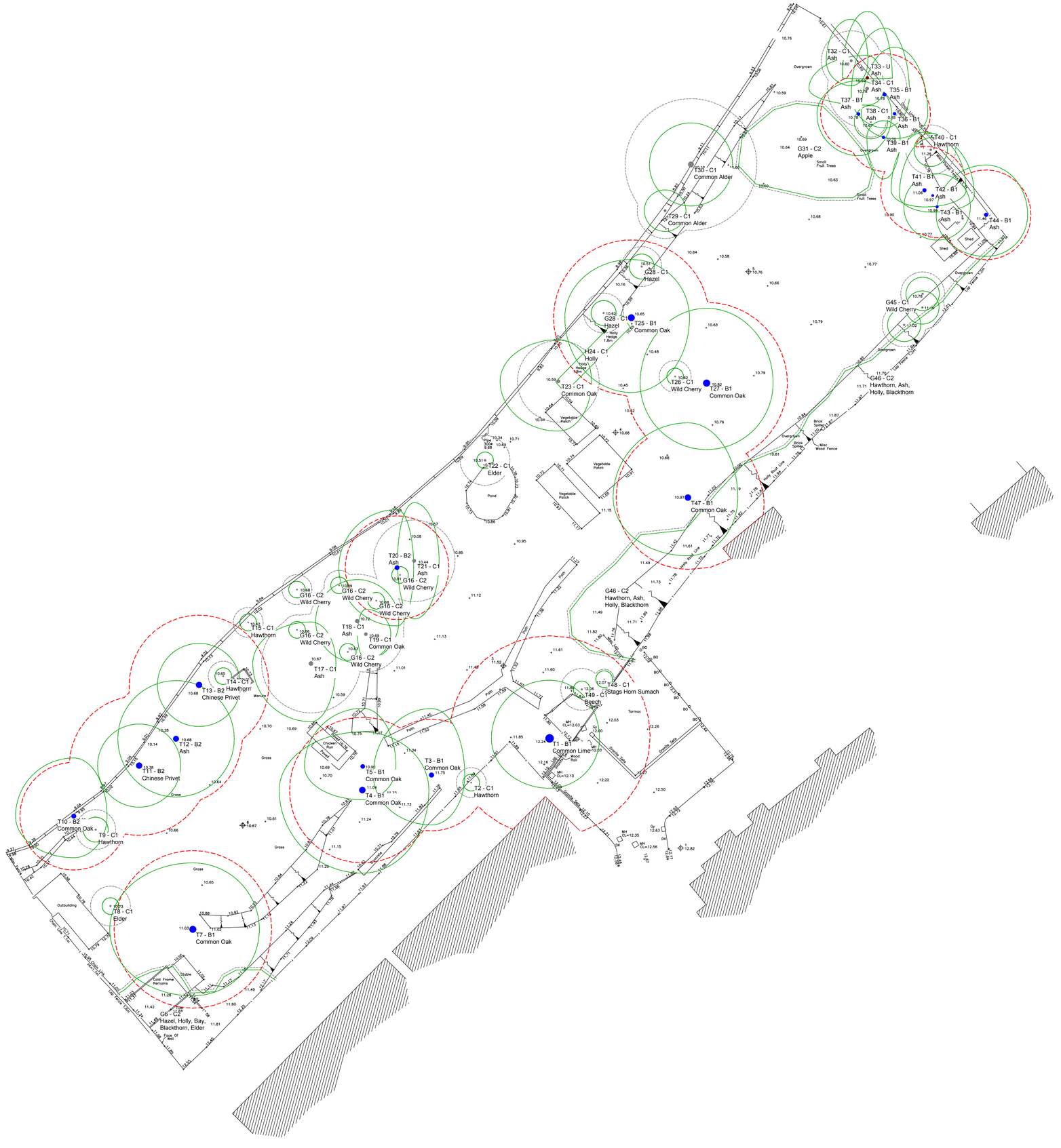
Notes: Dia (stems): trunk diameter in mm at 1.5m above ground level (number of stems) | HT (crown): Tree height in m (crown clearance in m) | Life stage: Y: Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). SM: Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). EM: Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). M: Mature (full height, crown spread, seed bearing; over 50% of attainable age.). OM: Over mature (full size, die-back, small leaf size, poor growth extension.).| FSB: First significant branch (& compass bearing) | ERC: Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.| BS Category: Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

No.	Name	Ht (crown)	Dia (stems)	Crown spread (NESW)	Life stage	ERC	Comments & preliminary recommendations	BS Cat
T38	Fraxinus excelsior (Ash)	10(2)	150(1)	2, 2, 2, 2	SM	10+	Tree of limited value.	C1
T39	Fraxinus excelsior (Ash)	20(2)	340(1)	2, 2, 5, 2	SM	20+	Tree of moderate value.	B1
T40	Crataegus monogyna (Hawthorn)	5(1)	250(1)	2, 2, 2, 2	EM	10+	Tree of limited quality and value on boundary edge.	C1
T41	Fraxinus excelsior (Ash)	20(2)	440(1)	7, 5, 2, 4	M	20+	Tree of moderate value. Low branch has snapped and is still hanging- remove branch.	B1
T42	Fraxinus excelsior (Ash)	20(2)	280(1)	7, 5, 2, 4	M	20+	Tree of moderate value. Ivy clad, restricting visual inspection.	B1
T43	Fraxinus excelsior (Ash)	20(2)	310(1)	4, 4, 4, 4	M	20+	Tree of moderate value. Ivy clad, restricting visual inspection.	B1
T44	Fraxinus excelsior (Ash)	20(2)	450(1)	6, 5, 5, 6	M	20+	Diameter estimated. Tree of moderate value. Ivy clad, restricting visual inspection.	B1
G45	Prunus avium (Wild Cherry)	10(1)	220(1)	2, 2, 2, 2	EM	10+	Trees of limited quality and value.	C1
G46	Crataegus monogyna (Hawthorn), Fraxinus excelsior (Ash), Ilex aquifolium (Holly), Prunus spinosa (Blackthorn)	3(0)	150(1)	As indicated on plan	EM	10+	Value as screening.	C2
T47	Quercus robur (Common Oak)	22(3)	720(1)	9, 6, 7, 9	M	20+	Good value on boundary. Cut back on south-western side.	B1
T48	Rhus typhina (Stags Horn Sumach)	3(1)	100(1)	1, 1, 1, 1	Y	10+	Tree of little quality and value.	C1
T49	Fagus sylvatica (Beech)	4(1)	210(1)	1, 1, 1, 1	EM	10+	tree has been heavily pruned.	C1

Notes: Dia (stems): trunk diameter in mm at 1.5m above ground level (number of stems) | HT (crown): Tree height in m (crown clearance in m) | Life stage: Y: Young (obviously planted within the last three years (unless as a heavy or extra-heavy standard)). SM: Semi mature (recently planted and yet to attain mature stature; up to 25% of attainable age.). EM: Early mature (almost full height, crown still developing and seed bearing; up to 50% of attainable age.). M: Mature (full height, crown spread, seed bearing; over 50% of attainable age.). OM: Over mature (full size, die-back, small leaf size, poor growth extension.).| FSB: First significant branch (& compass bearing) | ERC: Expected remaining contribution in years- <10, 10+, 20+, 40+ (assuming that there will be no physical changes to its immediate environment.| BS Category: Refer to appendix 1 of this report or BS5837:2012 Table 1 for detailed descriptions.

Appendix 3: Tree Reference Plan

PRI20469-01



How to use this plan

This plan follows the recommendations of BS5837:2012 and provides sufficient information for designers to interpret the constraints presented by the trees on and around the site. If there are any questions about how to correctly interpret the details shown, then ACD should be contacted on 01483425714 or mail@acdenv.co.uk

This plan is for design use. Before making a planning application, ACD should assess the impact of the layout and draft a full arboricultural impact assessment (AIA)

Designers should seek to retain all A & B category trees, and work within the constraints posed by them, as the LPA will expect their retention. C category trees should not be a material constraint trees and may be removed to facilitate development. However, their retention should be sought where practical, but the scheme need not be designed around them.

Developable area

Root protection area (RPA) for A & B category trees
The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS5837:2012 advises that default position is that structures & surfaces are located outside this area. However, where there is an overriding justification for construction within the RPA, technical solutions might be available that prevent damage to the tree(s). It is essential that you contact ACD to discuss any proposals within this area before finalizing a design.

RPA for C category trees

Note: Future growth area
Any layout design should only site small non-habitable buildings (garages, cycle stores, etc) within 2 m of tree canopies. In addition to providing space or the tree's growth, this also allows for the working and access space needed for the construction of the buildings. In some instances it may be viable to carry out some pruning but his often raises objections from LPAs and therefore ACD should be consulted on any proposals to prune, or site buildings in this area, before finalising any design

Shading
The design should also avoid unreasonable obstruction of light, by siting buildings so that only flank walls and/or non-habitable/dual aspect rooms are close to retained trees. Gardens should be orientated to provide some shade free areas during the day.

Tree categories

A category tree- high quality

B category tree- moderate quality

C category tree-low quality

U category tree- less than 10 years useful life

The original of this drawing was produced in colour- a monochrome copy should not be relied upon.

0 1 2 3 4 5 10m

Rev	Date	Details	Drawn

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drawing: Tree Reference Plan
date: April 2016
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drawn: CJP checked: MW

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