BY APPOINTMENT
TO HER MAJESTY THE QUEEN
TREE SURGEONS
F.A. BARTLETT TREE EXPERTS CO. LTD.

Bartlett Consulting

BS: 5837 TREE SURVEY & TREE CONSTRAINTS PLAN

Our Ref: GD/190110R1/Rv1
Date: 4th December 2019

CLIENT: Guild Living Ltd
One Coleman Street
London
EC2R 5AA

SITE ADDRESS: Epsom Hospital
Dorking Road
Epsom
Surrey
KT18 7EG

DATE OF VISIT: 31st May 2019 & 4th December 2019

PEOPLE PRESENT: Mr G Davies (Bartlett Consulting)

REPORT COMPLETED BY: Mr G Davies *FdSc Arb*

Summary:

The following report evaluates the trees within and adjacent to the above site, using the criteria and guidance set out in the British Standard 5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations.*

The wider amenity and landscape values of the trees, as well as their useful life expectancies are determined, and as a result, a category grading to all trees for retention using the "Cascade Chart for Tree Quality Assessment" is assigned.

A Tree Constraints Plan has also been drawn and appended to the report. The Plan illustrates the tree locations, their above and below ground constraints and their spatial requirements with any proposed development.

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1.0 SCOPE OF REPORT

1.1 Instruction

Bartlett Consulting has been instructed to undertake a tree survey in accordance with British Standard 5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*, for the trees and vegetation within the boundary of Epsom Hospital, Dorking Road, Epsom, Surrey, as well as on neighbouring properties that have the potential to influence a proposed development and which therefore must be considered as a constraint within the project planning.

1.2 Documents & Supporting Information

Bartlett Consulting was provided with the following documentation and plans prior to the site visit & tree survey. They were produced by 3sixty Measurment and sent via email in both PDF and DWG file format:

- Site Plan – Plot 2A Dwg No: -04 Project No: 18385 Dated: Sept 2018

1.3 Aspects Included within Report

The tree survey included within this report is fully compliant with British Standard 5837: *Trees in Relation to Design, Demolition and Construction – Recommendations*. The tree survey schedule, included within Appendix 3* details; species name, various physical dimensions, notable observations and prescribes any preliminary tree works, whilst categorising the trees to their respective landscape/cultural value and perceived life expectancy and finally concluding with identifying those trees suitable for retention.

The tree survey has been conducted in accordance with the principals of the Visual Tree Assessment (VTA), a method developed by Mattheck & Breloer (1994); this is preliminary in nature and must not be misinterpreted as a detailed tree condition inspection.

The prescribed tree works only pertain to trees that pose an immediate and serious hazard to persons and property or may be affected by a pathogen or pest of known contagion and pose a risk to other trees.

This report is accompanied with a Tree Constraints Plan (TCP), accurately detailing the positions of trees and vegetation, illustrating the physical dimensions of the crowns as per the cardinal points, as well as the calculated Root Protection Area (RPA) of each tree.

Modified RPA's will be illustrated if known below ground level obstructions exist, whilst tree shade patterns and future canopy spread for young trees will also be illustrated where necessary.

1.4 Aspects Excluded from Report

The prescribed tree works contained within this report do not take into consideration possible facilitation pruning. This report does not include an Arboricultural Implications Assessment (AIA), Arboricultural Method Statement (AMS), or a Tree Protection Plan (TPP).

The contents of this report do not include discussions regarding subsidence and/or heave as a result of retention or tree removal, nor does this report consider the water demands of trees present to determine foundation design and depth. If required, this can be provided on request.

2.0 TREE PRESERVATION ORDER & CONSERVATION AREA PROTECTION STATUS

The Town & Country Planning Act (Tree Preservation) (England) Regulations 2012 and the Town & Country Planning Act 1990 (as amended) provides legislative protection for trees within England.

A tree protection status check was conducted by Bartlett Consulting on 6th June 2019 through the Epsom & Ewell Borough Councils interactive mapping website available at:
http://myeebc.epsom-ewell.gov.uk/myeebc2.aspx

2.1 Tree Preservation Order (TPO) Status

None

2.2 Conservation Area (CA) Status

None

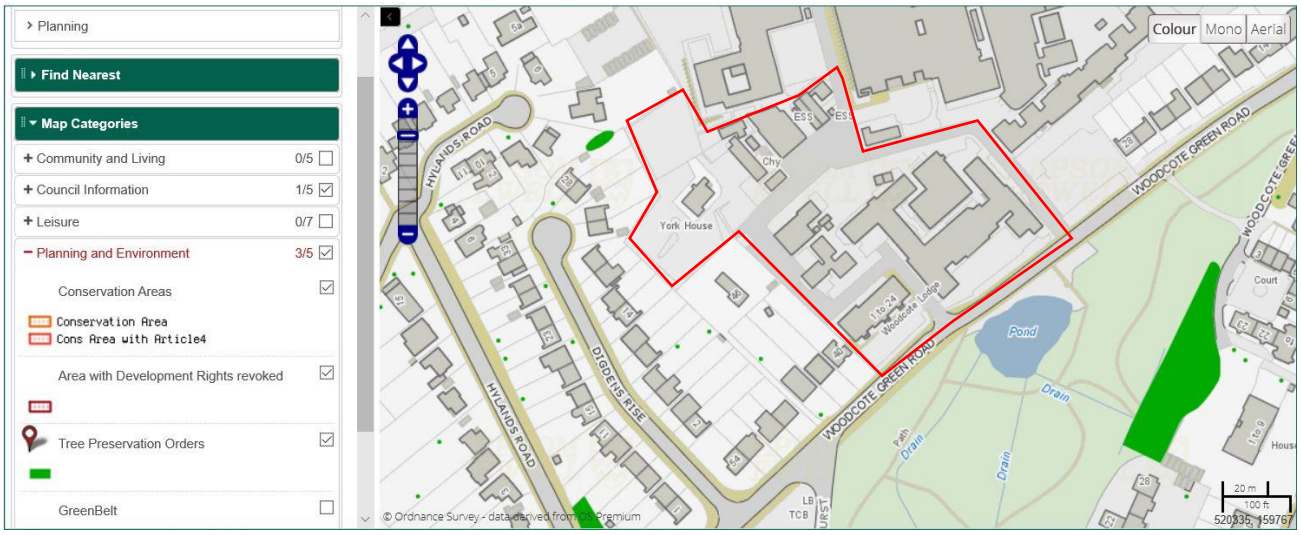

Figure 1: Showing a Screen Shot obtained from Epsom & Ewell Borough Council, with the Proposed Site Highlighted in Red.

2.3 Tree Management Implications

Using the on line interactive mapping service the site does not appear to fall within a designated conservation area nor are any trees on site covered by a Tree Preservation Order (TPO). As such tree works can be carried out without prior notification to Epsom & Ewell Borough Council.

3.0 GENERAL SITE DETAILS

3.1 Description of the Site

Epsom General Hospital occupies the land between Dorking Road, to the north and Woodcote Green Road to the south. The proposed site incorporates 1.13 hectares located to the southern side of the Epsom Hospital campus and contains a number of buildings, temporary structures and associated infrastructure representing the historical use and function in connection with the hospital.

The proposed site sits on a relatively level gradient and shares a proportion of its western boundary with a number of residential dwellings.

Figure 2: Showing Epsom Hospital as viewed from the adjacent land facing north-west towards Woodcote Green Road

3.2 Local Landscape & Amenity Evaluation

The built environment around the proposed site consists mainly of two-storey semi-detached and terrace housing.

The immediate landscape and tree cover around the site is predominantly located to the north and south within public areas and private residential gardens.

The trees subject to the report are considered to have moderate public visibility and amenity value, due to un-restricted public access within the site.

3.3 Previous Surveys & Site History

We are not aware of any other surveys being conducted on site, other than the Topographical Site Survey, nor are we aware of any historical or cultural values relating to the trees.

4.0 GENERAL TREE DETAILS

4.1 Tree Identification & Location

The trees subject to this report are located within the curtilage of the proposed site at Epsom Hospital, and within adjacent land.

The locations of the surveyed trees are illustrated on the Tree Constraints Plan (TCP) accompanying this report.

The accuracy of the tree locations are based entirely upon the provided Topographical Site Survey drawing. As access to adjacent third party property and some restricted areas where not possible at the time of the survey, some trees subject to this report have been surveyed and plotted by Bartlett Consulting using a laser Distometer, a measuring tape and fixed points. Whilst this method does not guarantee accuracy provided by a land or topographical site survey, it is considered sufficient to allow the plotting of calculated Root Protection Areas.

Trees that have been plotted using this method include: G8, T28, G32, T33 & G37.

Where deemed appropriate to do so, some trees have been considered as a group.

4.2 Trees Included within the Survey

Only trees that are present and have a measured stem diameter equal to or greater than 75 millimetres are included within the tree survey.

Where possible and deemed appropriate to do so, trees present within adjacent lands which are located within influencing distance will be recorded. In such instances, all observations and measurements shall be obtained from the site, unless prior consent is granted by the landowner. In these instances, all measurement will be accompanied with a * suffix.

It must be noted that trees and groups G8, T28, G32, G33 are all outside of the application site boundary and therefore the responsibility of a third party. For the trees to be pruned properly, permission to access the land and prune the trees must first be granted by the landowner in accordance with British Standard 3998:2010 *Tree Work – Recommendations.*

4.3 Categorisation & Gathered Data

All gathered data contained within the Tree Survey Table is provided within Appendix 1 is compliant with the guidance set out within Section 4.4 of British Standard 5837: *Trees in Relation to Design, Demolition and Construction – Recommendations.*

Each tree is categorised as per the cascade chart given as Table 1 within the British Standard 5837, a copy of which is provided within Appendix 2 of this report.

5.0 TREE CONSTRAINTS PLAN

5.1 Tree Constraints

Below Ground Level Constraints

The below ground level constraint on any site will include the root system and rooting environment of trees being retained. The data gathered during the Tree Survey permits the creation of a Tree Constraints Plan (TCP). The TCP illustrates the trees location within and adjacent to the site, the physical dimensions of the main stem and crown above ground as well as the constraints below ground level caused by the calculated Root Protection Area (RPA) of each tree.

The calculated RPA is indicated by the orange broken circle on the TCP and shows the minimum area around each tree or groups of trees, subject to the Tree Survey, which is deemed to contain sufficient roots and rooting environment to maintain the current vitality of the tree. This area is as per the requirements of *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations.*

In the first instance, the RPA should remain a construction exclusion zone and all proposed development should be planned and located outside the RPA for trees of such quality and value to be retained, essentially leaving the RPA sacrosanct.

Above Ground Level Constraints

The above ground level constraints on a development site can be numerous, resulting primarily from the current and/or ultimate crown height and spread of the retained tree, its species characteristics, such as evergreen or deciduous, the height of its crown above ground level and any "nuisance" that might be the result of a tree's proximity to living areas.

Proposed structures should be designed and/or located with due consideration of above ground constraints so as to prevent direct damage from occurring to the structure, as well as the need for unnecessary and possibly damaging tree management works due to shade and/or falling leaves affecting amenity space and living areas.

Whilst not affecting the total area of the calculated RPA, it may in some circumstances be modified. This consideration is made by the Arboriculturalist and included within the Arboricultural Implications Assessment (AIA), whilst taking into account the morphology and disposition of roots, the soil type and structure, topography and drainage, as well as any other known physical obstructions above and below ground level.

This report does not give consideration in this instance to the growth potential of trees or possible effects caused by of the obstruction of daylight to any existing building or proposed development.

Proposed structures should be designed and/or located with due consideration of this assessment and information, so as to prevent direct damage from occurring to the structure, as well as the need for unnecessary and possibly damaging tree management works.

6.0 CONCLUSIONS

6.1 Further Considerations

Once a scheme has been presented, an Arboricultural Implications Assessment (AIA) will take into account any issues relating to a proposed development design and layout of the site in regards to the retained trees.

This document will identify any trees that will require facilitation pruning, and/or removal, and those that will require replacement tree planting. Where the AIA has identified potential tree and development conflicts, we will provide recommendations for design modification and adjustment of the proposed footprint where necessary. The AIA will also provide methods of mitigation where required to ensure potential conflict does not cause damage to any retained trees.

An Arboricultural Method Statement (AMS) will be the final phase of the project, whereby specific construction methods and details pertaining to mitigation measures are provided.

The Tree Protection Plan (TPP) is typically composed at the same time when the AMS is written, following finalisation of a development design/ site layout. The TPP will identify trees to be retained, removed, and pruned for facilitation purposes, as well as the location and specification of tree protection barriers and non-compacting ground protection to be installed on site.

The AMS will consider construction activities where they are in close proximity to retained trees, dealing with issues such as site access, intensity of activity, the provision of a suitable working space, designated areas for delivery and storage of building materials, and if know at the time of writing the location of service runs and soakaways.

APPENDIX 1 TREE SURVEY KEY

Tree Reference Number	The tree number of physical tree tag (if applicable) provided to an individual tree or group of trees, as shown on the Tree Constraints Plan.
Species	Generally the common name given to the tree species. The Latin name is sometimes provided as clarification where deemed necessary.
Height	This figure is given in metres. Measurements are obtained using a digital clinometer. A black asterisk * will denote that the measurement is estimated.
Stem Diameter	This figure is given in millimetres. Measurement are obtained using a standard diameter tape, whilst measured from 1.5 metres above ground level, or otherwise indicated. A black asterisk * will denote that the measurement is estimated.
Crown Spread	This figure is given in metres. Measurements are obtained radially for all four cardinal points using a laser range finder. A black asterisk * will denote that the measurement is estimated.
Crown Clearance	This figure is given in metres. Measurements are obtained radially for all four cardinal points, between the crown and ground level, and obtained using a digital clinometer. A black asterisk * will denote that the measurement is estimated.
Height to first major branch	This is an approximate figure given in metres. Measurements are obtained by identifying the lowest lateral branch within the crown. Recorded information will also refer to a cardinal direction, and obtained using a digital clinometer. A black asterisk * will denote that the measurement is estimated.
Age	The following abbreviations are used to give the age of the tree; NP = Newly Planted, Y = Young, aged less than one quarter of its life expectancy, SM = Semi-Mature, trees of approx. one quarter of its life expectancy, EM = Early-Mature, between one quarter & half of its life expectancy, M = Mature, trees of over half of its life expectancy, OM = Over Mature, trees exceeding their life expectancy, V = Veteran, over mature trees which contain multiple wildlife habitat features & associations.
Physiological Condition	The following considerations are used to evaluate the physiological conditions of a tree (foliage & vitality): Dead, Poor, Fair & Good, with intermediate descriptions using same phrasing.
Structural Condition	Standard comments referring to the visible structural condition of tree: Hazardous, Poor, Fair, Good, with intermediate descriptions using same phrasing.
Observations	These are brief comments which relate to observations from ground level, unless otherwise stated. These observations are made to assist in categorising the tree. They do not provide or replace a comprehensive condition survey.
Preliminary Management Recommendations	These recommendations will only identify the need for more detailed assessment/inspection or tree management due to tree hazards of features which present an immediate risk to persons & property. The tree works do not consider general husbandry or required management of the trees, nor do they consider tree works that may be required prior to development or to facilitate access to the site.
Estimated Remaining Contribution	This is the number of estimated years that the tree will remain present and contribute to the local landscape. The following bands are used; <10 years, 10+ years, 20+ years & 40+ years.
Categorisation	This is the grading category applied following the tree survey. Trees are categorised in accordance with the cascade chart provided within Table 1 in BS: 5837 (2012). A copy of this chart is provided within Appendix 2 of this report. An asterisk * will denote that the categorisation as given will be dependent upon information gained from further detailed inspection of the tree.
Root Protection Area & Root Protection Radius	The RPA is a figure given in metres squared which is the minimal area that should be left undisturbed. The RPR is a figure given in metres, a measured radial distance away from the trees main stem.

APPENDIX 2 BRITISH STANDARD: 5837 (2012) TABLE 1, TREE CATEGORISATION

TREES UNSUITABLE FOR RETENTION				
CATEGORY & DEFINITION	CRITERIA			IDENTIFICATION ON PLAN
Category U Those trees 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 serious, irremediable, structural defects, 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 might be desirable to preserve.			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
CATEGORY & DEFINITION	CRITERIA (subcategories)			IDENTIFICATION ON PLAN
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
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)	LIGHT GREEN
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 & 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	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	MID BLUE
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 significant greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY
	NOTE: Whilst category C trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.			

APPENDIX 3 BRITISH STANDARD: 5837 (2012) TREE SURVEY SCHEDULE

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T1	Common Elder *Sambucas nigra*	4	75	2.5	2	2	2	1.5	1.5	1.5	1.5	2.5	SM	F	F	F	G	●Multiple stem specimen ●Previously topped at 1.8m	-No works currently required	10+	C1	3 0.9
T2	Common Yew *Taxus baccata*	11	650	5.5	5	6	5	2	2	3	2	5.5	SM	F	F	F	F	●Common Ivy at base on main stem and throughout lower crown inhibiting full inspection ●Mechanical damage of raised roots	-No works currently required	10+	C1	191 7.8
G3	Mixed Group	6	200	3	3	3	3	0	0	0	0	3	SM	P	P	P	P	●Undefined group of laburnum Elder, Japanese spindle & Sycamore. ●Common Ivy at base on main stem and throughout crown inhibiting any inspection	-No works currently required	<10	U	18 2.4
T4	Lawson Cypress *Chamaecyparis lawsoniana*	8	250	1	1	1	1	2	2	2	2	1	SM	D	P	P	P	●Dead standing specimen ●Common Ivy at base on main stem and throughout crown ●Lean on stem to north-east overhanging carpark	-Remove	<10	U	28 3.0
T5	Common Holly *Ilex aquifolium*	8	270	3	2	2	2	1.5	0	0	0	3	SM	P	F	F	P	●Growing within proximity to dead cypress ●Common Ivy at base on main stem and throughout crown inhibiting full inspection ●Dieback expressed throughout crown	-No works currently required	<10	U	32 3.2
T6	Common Laburnum *Laburnum anagyroides*	6	130	1	2	2	2	2	1	2.5	2	1	SM	F	F	P	F	●Multiple stem from base ●Wounding on lower stem ●Minor deadwood throughout crown	-No works currently required	10+	C1	8 1.6
T7	Silver Birch *Betula pendula*	13	310	2.5	2.5	2.5	2.5	3	3	3	3	2.5	SM	G	G	G	G	●Growing within proximity to boundary ●Recent reduction of crown	-No works currently required	10+	B1	43 3.7

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
G8	Group of Lawson Cypress *Chamaecyparis lawsoniana*	5	200* avg	3	3	3	3	2	2	2	2	3	SM	F	F	F	F	●Third party trees ●North-eastern crown overhanging carpark	-No works currently required	10+	C2	18 2.4
G9	Group of 3 Sycamore *Acer pseudoplatanus*	15	360 400-300 450	6	6	5	5	4	3	3	3	6	SM	G	G	G	G	●Hardstanding at base to north, east & west resulting in limited rooting environment ●Epicormic regrowth within lower crown ●Minor deadwood throughout crown	-No works currently required	20+	B2	58 4.3 113 6 92 5.4
T10	Group of 11 Common Yew *Taxus baccata*	5	150 avg	2	2	1	2	1	1	1	1	2	SM	F	F	F	F	●Planted as hedge ●Suppressed from neighbouring trees ●Previously lateral reduction of the overhanging eastern crown	-No works currently required	10+	C2	10 1.8
T11	Common Ash *Fraxinus excelsior*	15	300	8	7	4	2	2	3	6	6	8	SM	F	F	F	F	●Growing within proximity to neighbouring sycamore tree resulting in asymmetrical crown bias to north & east ●Common Ivy at base on main stem and throughout crown inhibiting full inspection	-No works currently required	10+	C1	41 3.6
T12	Sycamore *Acer pseudoplatanus*	14	420	4	4	7	4	8	8	2	2	4	SM	F	G	G	F	●Common Ivy at base on main stem and throughout crown inhibiting full inspection ●Lean on stem to south due to proximity of neighbouring Ash, self-corrected at 3.0m ●Asymmetrical crown bias to south	-No works currently required	10+	C1	79 5.0
G13	Lawson Cypress *Chamaecyparis lawsoniana*	12	350	2	2	2	2	1	1	1	1	2	SM	D	P	P	P	●Dead standing specimen	-Remove	<10	U	55 4.2

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T14	Group of 11 Field Maple *Acer campestre*	13	230 avg	2	4	2	5	2	2	2	2	2	SM	G	G	G	G	●Single and multiple stem specimens ●Planted within boundary providing effective screening to neighbouring property ●Western crown overhanging carpark	-No works currently required	20+	B2	25 2.8
T15	Sycamore *Acer pseudoplatanus*	20	840	8	8	8	8	4	3	3	2	8	M	G	G	G	G	●Bifurcation of main stem at 2.5m ●Partial suppression of lower crown due to smaller neighbouring trees	-No works currently required	20+	A1	320 10.1
T16	Holm Oak *Quercus ilex*	7	200	3	2	1	2	2	2	2	2	3	SM	F	F	F	F	●Growing within a mixed hedge resulting in sweep on main stem ●Suppression from larger neighbouring tree ●Damage to foliage, suspected leaf-minor	-No works currently required	10+	C1	18 2.4
T17	Common Ash *Fraxinus excelsior*	8	500	0	0	3	0	0	0	0	0	0	D	D	P	P	P	●Dead standing monolith ●Common Ivy at base and on main stem ●Significant decay throughout	-Remove	<10	U	113 6
T18	Apple *Malus domestica*	12	220	3	3	1.5	1.5	2	2	2	2	3	SM	G	G	G	G	●Hardstanding to the east resulting in limited rooting environment ●Common Ivy at base and on main stem inhibiting full inspection ●Asymmetrical crown bias to north and east	-No works currently required	10+	C1	21 2.6
T19	Mountain Ash *Sorbus aucuparia*	10	160	3	3	1	1	2	2	2	2	3	SM	F	F	F	F	●Hardstanding to east resulting in limited rooting environment ●Common Ivy at base and on main stem inhibiting full inspection ●Asymmetrical crown bias to east due to suppression from neighbouring trees	-No works currently required	10+	C1	11 1.9

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T20	Holm Oak *Quercus ilex*	12	260	4	5	4	4	2	2	2	2	4	SM	G	G	G	F	●Hardstanding to north and south resulting in limited rooting environment ●Common Ivy at base and on main stem inhibiting full inspection ●Asymmetrical crown bias to east overhanging carpark	-No works currently required	10+	C1	30 3.1
T21	Common Ash *Fraxinus excelsior*	13	180	2	3	3	3	3	3	3	3	2	D	D	P	P	P	●Dead standing specimen	-Remove	<10	U	15 2.2
T22	Bird Cherry *Prunus padus*	4	150	1	1	1	1	1	1	1	1	1	D	D	P	P	P	●Dead standing specimen	-Remove	<10	U	10 1.8
T23	Common Horse Chestnut *Aesculus hippocastanum*	16	890	7	7	7	7	3	2	3	2	7	M	G	G	G	G	●Build-up of green waste and foreign soils at base ●Hardstanding within eastern quadrant resulting in limited rooting environment ●Common Ivy at base and on main stem inhibiting full inspection ●Historical pollard at 7.0m resulting in multiple regrowth	-No works currently required	20+	B1	360 10.7
G24	Group of 2 Common Ash *Fraxinus excelsior*	11	170 160	2	4	3	2	2	1	1	2	2	SM	G	G	G	G	●Lean on stems and asymmetrical crown bias to east overhanging carpark	-No works currently required	10+	C2	13 2.0 11 1.9
T25	Hybrid Poplar *'Robusta Populus x canadensis* 'Robusta'	13	980	5	3	2	4	3	3	3	3	5	M	P	P	F	P	●Green waste dumped at base ●Poor resonance to the north and eastern quadrants when sounded ●Topped at 10.0m resulting in 3.0m regrowth ●Major deadwood throughout crown and suspected decay within old pruning wounds	-Remove	<10	U	437 11.8

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T26	Austrian Pine *Pinus nigra ssp. Nigra*	21	780	5	7.5	5	6	10	8	8	6	5	M	G	G	G	G	●Common Ivy at base and on main stem, previously severed ●Asymmetrical crown bias to north due to presence of neighbouring tree now reduced ●Minor deadwood throughout crown	-No works currently required	20+	A1	278 9.4
T27	Hybrid Poplar *'Robusta'Populus x canadensis* 'Robusta'	10	910	1	1.5	1.5	1.5	3	2	2	2	1	M	P	P	P	P	●Poor resonance when sound on main stem up to 2.5m indicating significant internal decay ●Borrowing under main stem ●Topped at 7.0m with approx. 3.0m regrowth ●Decay suspected within pruning wounds	-Remove	<10	U	373 10.9
T28	Common Ash *Fraxinus excelsior*	13	240	3	3	4	4	3	3	3	3	3	SM	G	F	F	G	●Third party tree growing within neighbouring garden ●Unable to view at base ●Asymmetrical crown bias to south	-No works currently required	10+	C1	26 2.9
T29	Common Lime *Tilia europaea*	14	760	7	7	7	7	2.5	2.5	2.5	2.5	7	SM	G	F	F	G	●Epicormic regrowth and ●Common Ivy at base inhibiting full inspection ●Large wound with western quadrant of lower stem, partially occluded ●Historical pollard at 7.0m resulting in multiple points of regrowth ●Major deadwood and hanging branch in crown	-Remove major deadwood and hanging branch	20+	B1	260 9.1

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T30	Common Lime *Tilia europaea*	17	660	6	6	4	4	2.5	1	2	2	6	SM	G	F	F	G	●Epicormic regrowth and Common Ivy inhibiting full inspection of base and main stem ●Historical pollard at 6.0m resulting in multiple points of regrowth ●Asymmetrical crown bias to north and east	-No works currently required	20+	B1	196 7.9
T31	Common Lime *Tilia europaea*	16	540	5	5	5	5	2	2	2	2	5	SM	G	G	G	G	●Epicormic regrowth and Common Ivy inhibiting full inspection of base and main stem ●Multiple leaders forming from 6.0m with dominant central leader	-No works currently required	20+	B1	133 6.5
G32	Group of 7 Common Ash *Fraxinus excelsior*	15	550	4	4	4	4	4	4	4	4	4	SM	F	F	F	F	●Third party trees ●Single and co-dominate stem specimens ●Unable to view at base ●Significant recent tree works resulting in high pollard and reactive shoots	-No works currently required	20+	B2	137 6.6
T33	Common Ash *Fraxinus excelsior*	15	500	9	6	3	3	3	3	3	3	9	SM	F	F	F	F	●Third party tree ●Unable to view at base ●Common Ivy on main stem inhibiting full inspection ●Asymmetrical crown bias to north and east overhanging boundary ●Previously lateral reduction of northern crown ●Minor deadwood throughout	-No works currently required	20+	B1	113 6.0

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
G34	Group of 5 Lawson Cypress *Chamaecyparis lawsoniana* 'Pembury blue'	4	180 avg	2	2	2	2	0	0	0	0	2	SM	D	F	F	P	●Self-set young Sycamores establishing between ●Dieback expressed throughout crown	-No works currently required	<10	U	15 2.2
G35	Group of 15 Leyland Cypress *X Cupressocyparis leylandii*	9	200	3	2	3	3	2	2	2	2	3	SM	F	F	P	F	●Hardstanding at base resulting in poor rooting environment ●Stakes and ties still attached girdling stem ●Previous pruning of lower crown to provide clearance over carpark area	-Remove stakes and ties	10+	C2	18 2.4
T36	Copper Beech *Fagus sylvatica* 'Purpurea'	18	770	8	7	7.5	6.5	1.5	1	2.5	3	8	M	G	G	G	G	●Limited rooting environment due to hardstanding and building within proximity of main stem ●Regrowth within lower eastern crown	-No works currently required	20+	A1	266 9.2
G37	Group of Lawson & Sycamore	6	120 150	1	1	1	1	1	1	1	1	1	SM	G	F	F	G	●Located within caged off liquid oxygen plant ●Unable to view at base ●Inappropriate location for future retention	-Remove	10+	C1	6 1.4 10 1.8
T38	Silver Birch *Betula pendula*	9	230	3	3	3	3	2	2	2	2	3	D	D	P	P	P	●Dead standing specimen	-Remove	<10	U	25 2.8
G39	Group of 2 Lawson & 2 Leyland Cypress	5	200 avg	2	1.5	1.5	1.5	0	0	0	0	2	SM	D	F	F	P	●Growing on mound with limited rooting environment to all quadrants ●Poor previous management and significant dieback expressed throughout crown	-No works currently required	<10	U	18 2.4

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
T40	Common Pear *Pyrus communis*	5	270	1	1	1.5	1	2	2	2	2	1	SM	F	G	F	F	●Poor rooting environment to north, south and west ●Epicormic regrowth on main stem ●Bifurcation of main stem at 1.8m ●Asymmetrical crown bias to west	-No works currently required	10+	C2	32 3.2
T41	Common Pear *Pyrus communis*	5	340	3	3	2	3	2	2	2	2	3	M	F	G	F	F	●Trifurcation of main stem at 1.5m ●Small cavity within union, solid when probed ●Minor deadwood throughout crown	-No works currently required	10+	C2	53 4.1
T42	Common Pear *Pyrus communis*	4	200	2	2	2	1	2	1	1	1	2	M	P	P	P	P	●Significant epicormic regrowth from base inhibiting full inspection ●Dieback expressed throughout upper crown	-No works currently required	10+	C2	18 2.4
T43	Common Laburnum *Laburnum anagyroides*	3	160	1.5	1.5	1.5	1.5	1.5	2	2	2	1.5	SM	G	G	G	G	●Growing within flower bed with hardstanding to north and southern quadrants	-No works currently required	10+	C1	11 1.9
T44	Apple *Malus domestica*	4	120	2.5	2.5	2	2	2	2	1.5	1.5	2.5	SM	G	G	G	G	●Growing with flower bed with limited rooting environment to north and southern quadrants ●Previous pruning of the southern lateral crown	-No works currently required	10+	C1	6 1.4
T45	Pissards Plum *Prunus atropurpurea*	5	140	2	2.5	1.5	3	2	2	2	2	2	SM	F	F	G	F	●Planted within a significantly restricted area surrounded by hardstanding ●Previous pruning of the lower crown to provide clearance over road and footpath	-No works currently required	10+	C1	9 1.7

Tree Ref No.	Species	Ht. (m)	Stem Dia. (mm)	Crown Spread				Crown Clearance				Ht. to 1st limb (m)	Age	Phys. Cond.	Structural Condition			Observations	Preliminary Management Recommendations	Life Exp.	Cat.	RPA in m2 (Radius /m)
				North	East	South	West	North	East	South	West				Basal	Stem	Crown					
G46	Group of 19 Yew *Taxus baccata*	Avg 7	90 to 440	4	4	4	4	2	2	2	2	2	SM	F	F	F	F	●Linear group ●Previous crown lift providing clearance from footpath & car parking ●Limited rooting environment ●Dominant end specimen trees	-Maintain clearance over footpath & car parking	+10	C2	4 1.1 to 88 5.3
T47	Field Maple *Acer campestre*	6	210	3	3	3	3	2	2	2	2	2	Y	F	F	F	F	●Common Ivy at base and on main stem	-No works required	+10	C1	20 2.5

APPENDIX 4 LIMITATIONS OF REPORT

Limitations of the Tree Survey & Scope of the Report

- This report is restricted to those trees & vegetation shown on the attached Tree Constraints Plan, described within the tree survey schedule, as identified within the instruction as per Section 1.1.
- All plans are illustrative of the discussions within the report and based entirely on the drawings provided to Bartlett Consulting. All scaled measurements must be checked against the original submission documents as well as confirmed on site.
- The survey was based on unaided, visual observations made from ground level only, using the principles of a Visual Tree Assessment (VTA).
- The trees were not climbed at the time of the survey.
- All observations were made from within the curtilage of the site or from a public open space unless otherwise stated.
- The tree survey is preliminary in its nature and must not be interpreted as a detailed tree condition inspection.
- This report does not consider the possible implications to any existing or proposed built structures. These matters will be dealt with in future reports as deemed necessary/ as and when instructed.

Timing of the Tree Survey & the Report

- The observations & finings of this report remain valid for one year, from the date of issuance.
- The observations & findings will be invalidated if any building works are undertaken, soil levels altered or tree works implemented.
- In the instance where building works have occurred, soil levels are altered or tree works completed, it is recommended that a new tree survey and report is completed.

Trees in Relation to other Properties

- The tree survey and report consider only those trees in relation to the site as identified.
- It does not comment upon the possible effects of trees on neighbouring properties, including matters concerning subsidence or heave, or with regards to potential hazards presented by trees surveyed.
- Neighbouring land/tree owners that are identified as posing a potential risk to the site should seek their own independent advice.
- Damage to, or potential damage to any existing structures that are not referred to within this report is not considered, unless otherwise specified. This is inclusive of built structures within and neighbouring the site.

Trees in relation to Subsidence, Heave and Direct Damage

- This report does not deal with matters concerning subsidence or heave to any existing built structure on or neighbouring the site. It may be prudent to consider the effects of heave on any built structure if trees are to be removed.
- Similarly, the issue of direct damage (physical damage caused by tree roots) is not dealt with in this report.

Tree Subject to Statutory Controls

- Whilst Bartlett Consulting has made attempts to ascertain if any of the trees subject to this report are 'protected', their status may be subject to change. Therefore the final responsibility for checking statutory protection for trees rests with the employed contractor and not with Bartlett Consulting
- Any prescribed tree works to a protected tree are provided due to perceived hazard and risk, and should be considered acceptable by the Local Planning Authority (LPA). However appropriate notification must still be provided to the LPA as they may take an alternative point of view.

Trees Subject to Environmental Factors

- The statements, findings and preliminary recommendations made within this report do not take into account any effects of extreme climate and weather incidences, vandalism, changes in the natural and built environment around the tree(s) after the date of this report, nor any damage whether physical, chemical or otherwise.

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APPENDIX 5 REPORT REFERENCES

As a progressive company, we keep abreast of research data relating to Arboriculture. All observations, recommendations and works are based on current industry standard reference material and a selection of pertinent items is shown below.

This survey and report has evolved from industry material including the following:

- O'Callaghan & Lawson (1995) *Trees and Development Conflicts: Importance of Advanced Planning & Site Control in Tree Preservation Plans*
- Matheny & Clark (1998) *Trees and Development a Technical Guide*
- BS 5837: (2012) *Trees in Relation to Design, Demolition and Construction – Recommendations*
- BS 3998: (2010) *Tree Works - Recommendations*
- Town & Country Planning Act (Tree Preservation) (England) Regulations 2012
- Mattheck, C, Bethge K, Weber K. (2015) *The Body Language of Trees – Encyclopaedia of Visual Tree Assessment* Karlsruhe Institute of Technology Campus North.

Bartlett Consulting's arboricultural expertise has been used to interpret these references for practical application to the site and the trees which are the subject of this report, and to provide the most appropriate advice and guidance at this stage of project planning.

We trust that the contents and recommendations contained within this report were informative, easy to understand and helpful to you, with regards to managing your tree. Should you have any further questions or concerns, please do not hesitate to contact us again.

REPORT CLASSIFICATION: Tree Survey & Constraints Plan

REPORT STATUS: Updated Final

REPORT COMPLETED BY: Mr. G Davies *FdSc Arb*
Arboricultural Consultant

SIGNATURE:  **DATE: 04/12/2019**