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

Bartlett Consulting

BS: 5837 TREE SURVEY & TREE CONSTRAINTS PLAN

Our Ref: JH190031/Rv2/sh

Your Ref: N/A

Date: 01st March 2019

CLIENT:	Brenda Weir
SITE ADDRESS:	Rookwood Stocking Lane Ballyboden Dublin 16
DATE & TIME OF VISIT:	14th February 2019 – 07:30
PEOPLE PRESENT:	Mr. Jason C. Hasaka – Bartlett Consulting Mr. Eamon O'Reilly – Bartlett Tree Experts
REPORT COMPLETED BY:	Mr. Jason C. Hasaka

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 the trees and vegetation within the boundary of Rookwood, Stocking Lane, Ballyboden, Dublin 16, that have the potential to influence any proposed development of the site, and which therefore must be considered as a constraint within the project planning.

As part of the British Standard 5837:2012 tree survey, Bartlett Consulting was asked to make general tree management recommendations outside the scope of any proposed development.

1.2 Documents & Supporting Information

Bartlett Consulting was provided with the following documentation and plans prior to the site visit & tree survey. They were sent via email in both PDF and DWG file format from the client's Architect, Ms. Fionnuala Rogerson:

- Southern Tree Surgeons, Tree Survey, November 2000
- Topographical Survey, Rookwood House, 08th February 2019
- Site Plan w/Indicative Development Areas, 17th January 2019

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. The survey schedule also categorises the trees to their respective landscape/cultural value and perceived life expectancy and identifies a notional tree and root protection area.

The tree survey has been conducted in accordance with the principals of the Visual Tree Assessment (VTA), a method discussed in detail by Mattheck & Breloer (1994). This level of tree survey is preliminary in nature, and must not be misinterpreted as a 'detailed' tree condition inspection during which diagnostic equipment is employed.

The prescribed tree works are general in nature, and recommendations include by high priority tree works due to hazard and risk to persons and property, as well as good practice and husbandry. High priority tree works are itemised in a separate table for easy reference.

This report is accompanied with a Tree Constraints Plan (TCP) accurately detailing the positions of trees subject to the survey, illustrating the physical dimensions of each tree crown as per the four cardinal compass 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.

1.0 SCOPE OF REPORT (continued...)

1.4 Aspects Excluded from Report

The prescribed tree works contained within this report do not take into consideration possible facilitation pruning which may be required as a result of the layout and footprint of any proposed development.

This report does not include an Arboricultural Implications Assessment (AIA), Arboricultural Method Statement (AMS), or a Tree Protection Plan (TPP) which will become necessary one a proposed layout has been designed.

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 LOCAL PLANNING POLICY

Ballyboden is within the governance of South Dublin County Council, and the designated 'South Suburban Dublin' area of the county. To guide and inform this document and development of Rookwood, we have referenced and detailed the two South Dublin County Council planning documents: South Dublin Development Plan (2016 – 2022) and Landscape Character Assessment of South Dublin County (2015) below.

We also made a specific enquiry as to the presence of any statutory tree protection, such as tree preservation orders or conservation area status, which may affect the property of Rookwood – however no reply had been received at the time of writing this document.

2.1 Green Infrastructure

Green Infrastructure (G) Policy 6 – New Development in Urban Areas protects and enhances green infrastructure in all new developments within urban areas to achieve higher standards of living and working environments. This is achieved through three objectives:

1) Protection and enhancement of trees, woodlands and hedgerows, as well as watercourses, in all new developments as an essential part of the design process.

2) The requirement for new development to link with green infrastructure on adjoining sites where they exist.

3) To provide multi-functional open space within all new development, which has provision for ecology and sustainable water management.

2.2 Heritage, Conservation and Landscapes

Heritage, Conservation and Landscape (HCL) Policy 7 – Landscapes looks to see the preservation and enhancement of landscape within South Dublin County, and to ensure that landscape considerations are a factor within the development. This is achieved through two objectives:

1) By ensuring new development retains, protects and where necessary, enhances the landscape. This should be achieved with consideration for the Landscape Character Assessment for South Dublin County, of which Ballyboden in within the LCA 5 Suburban South Dublin area.

2) By ensuring the new development is assessed against the Landscape Character, Landscape Values and Landscape Sensitivity criteria in the above referenced document.

2.3 Landscape Character Assessment

The designated Suburban South Dublin area has several bullet-points for ensuring the landscape is managed and not destroyed through new development. The most pertinent points are highlighted below:

· The western boundary is set against agricultural and mountain hinterlands. Untidy urban developments can adversely impact on the character of the hinterlands and poorly planned urban development can impact on open views to the hinterlands.

· New infill or other built developments can be insensitive to remnant historical or vernacular features.

3.0 GENERAL SITE DETAILS

3.1 Description of the Site

Rookwood is a reasonable sized property, with a detached two-storey residential dwelling situated to the southeast aspect of the grounds. The main entrance off Stocking Lane is located to the southwest.

The front and rear gardens are predominantly laid to lawn, with secondary gardens composed of grass and stone courtyard areas found around the northern aspects of the property. These gardens are separated from the main garden by a well-managed evergreen hedge.

Figure 1: Image of Front Garden, Rookwood, Stocking Lane

3.2 Local Landscape and Amenity Evaluation

The built environment around Rookwood is composed of moderate density residential development, with further residential development construction activity to the west of Stocking Lane. The built environment also contains a water treatment plant and some light-industrial businesses.

The landscape and tree cover of the immediate area is of a moderate canopy cover. There are mature trees in residential gardens to the north of Rookwood, and there are also golf courses and public open spaces which have tree cover.

The trees subject to the report are considered to have high public visibility and amenity value, especially those around the western and northern boundaries. The tree stock as a whole is important in the wider landscape and character of the area.

3.3 Previous Surveys & Site History

In November 2000, Southern Tree Surgeons carried out a tree survey and recommended a combination of tree removal and management. The report included discussions with regards to development of the site; however, there was no proposed site layout included with the Southern Tree Surgeons report.

4.0 GENERAL TREE DETAILS

4.1 Tree Identification & Location

The trees subject to this report are located within the curtilage of Rookwood, Stocking Lane, Ballyboden.

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 the adjacent third party property was not possible at the time of the survey, some tree details have been estimated by Bartlett Consulting.

Where deemed appropriate to do so, based on species and condition, some trees will be plotted as groups.

4.2 Trees Included within the Survey

Significant mature trees, and smaller amenity trees with a measured stem diameter equal to or greater than 150 millimetres have been surveyed and included within the tree survey.

Trees which were surveyed in November 2000 by Southern Tree Surgeons have a pre-existing tree tag and numerical prefix of "16..." Due to trees having a number of tags on them and to avoid any confusion, trees included within the 2019 survey were not tagged and have a numerical prefix of "00..."

4.3 Categorization & Gathered Data

All gathered data contained within the Tree Survey Table, as provided and described within Appendix 1, is compliant with the guidance set out in 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 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 located 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 magenta coloured 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.*

Whilst not affecting the total area of the calculated root protection area, in some circumstances the shape of the RPA can be modified. This consideration is made by the Arboriculturalist 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.

Any modification will be illustrated on the included Tree Constraints Plan.

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 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.

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, however the Architect should allow for the plotted crown spread and tree shade pattern on the Tree Constraints Plan.

6.0 CONCLUSIONS

6.1 Priority Tree Management

- The following schedule sets out proposed works involving trees.
- These works are for reasons of hazard and risk or essential good tree management
- All works will be carried out in accordance with BS3998: 2010 *Tree Works – Recommendations.*

Tree Ref	Species	Schedule of Works
T0022	Common Oak	1) Reduction in height and lateral spread to substantial live growth
T0010	Tulip	1) Reduction in lateral spread 2) Consider propping of stem to retain
T1683	Lawson Cypress	1) Aerial inspection of main union
T1684	Lawson Cypress	1) Installation of steel cable bracing system
T1694	Scots Pine	1) Reduction in height of small co-dominant leader to subordinate
T1699	Cherry	1) Remove
T0018	Blue Gum	1) Remove
T0024	Sweetgum	1) Remove
T0028	Mulberry	1) Check tension of bracing system – adjust as necessary 2) Check girdling of stems – loosen or replace as necessary
T0047	Dogwood	1) To Retain: bolt failed union 2) Alternative: remove and replace
T0054	Cedar	1) Reduction in height of included co-dominant to subordinate
T1656	Lime	1) Reduction in height and lateral spread
T1655	Lime	1) Remove

6.2 Initial Development Considerations

From information provided via personal email from Ms. Fionnuala Rogerson, Architect working on behalf of the landowner, Mr. and Mrs. Weir, there are three initial ideas for development of Rookwood. These are:

- A realigned driveway, centrally located, approximately 7.0 metres in width (zone A)
- Five mews style houses to the south and southwest of Rookwood (zone B)
- Four – five houses along the northern boundary of the site (zone C)

A centrally located driveway would require the removal of established and mature trees which contribute to the landscape and amenity of the local area, and potentially raise objections from the local authority.

However, selective tree removal and an inclusive driveway design which sweeps around retained trees could meet competing needs of development. For example the central Lime (T0002) and Oak (T0022) could be removed whilst retaining the other Lime trees, Sycamore and Beech.

The proposed driveway would also need to be on a non-dig, 3D cellular confinement system so as not to damage roots and soils around retained trees.

6.0 CONCLUSIONS (continued...)

6.2 Initial Development Considerations (continued...)

Zone B and the areas of domestic garden around the south and southwest of Rookwood is populated with a wide diversity of tree species, predominantly of an early-mature age classification, and most of which have significant future growth potential. There are also third-party trees to the west which need to be considered in the proposed site layout.

It would appear that complete tree removal would be necessary to facilitate the construction of five houses, leading to a loss of amenity and landscape value as well as screening between neighbouring properties. As above, this may be looked upon unfavourably by local residents as well as the local authority by removing canopy cover and damage to the environment.

We would recommend a reduction in the number of dwellings to facilitate tree retention as a balanced approach, and careful siting and layout to allow for future tree growth of those retained trees. Within Zone B, we would recommend the retention and protection of trees T0030; T0032; T0035; T0038 and T0039, where possible.

Zone C has the highest density of trees, the majority of which are mature evergreen species. The current courtyard area could be easily developed, whilst looking to retain some of the better trees around the northern periphery of this area.

We would recommend the grove of trees in the 'middle' of Zone C to be retained and included within the proposed development as a small communal garden and open space, including trees numbered 1686 – 1694.

Where Zone C overlaps with the front garden of Rookwood, the better quality trees should be retained and included with the proposed site layout to avoid wholesale tree clearance. Small stem, diameter, trees could be transplanted as part of landscaping, for example T0044.

The large root protection area of the two Lime trees (T1703 and T1704) should also be noted and included with the siting and proposed layout of development within Zone C.

6.3 Yew Hedge

We understand that it is hoped to retain and realign sections of the existing Yew hedge as part of the proposed development plans. In theory this is possible, however, there are several key considerations to aid successful transplanting: the amount of root system which can be carefully excavated and retained, the corresponding amount of area for replanting, timing of the works to limit tree stress and ensuring an intensive aftercare and maintenance programme.

Whilst the desire is commendable, considering the size and age of the hedgerow, it might be cost prohibitive when considering the specialist nature of the operations with regards to transplanting and ensuring survival of the identified sections of hedge.

A better understanding may be possible when an initial proposed site layout is designed.

6.0 CONCLUSIONS (continued...)

6.4 Further Stages of Project Planning

Once a formal proposed site layout has been designed and presented, an Arboricultural Implications Assessment (AIA) will take into account detailed issues relating to the proposed development design and existing tree population.

Where the AIA identifies 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 with regards to proposed construction and design to ensure potential conflict does not cause damage to any retained trees.

This document will also identify any trees that will require facilitation pruning and/or removal to achieve the proposed development, as well as those trees which we consider will require replacement tree planting.

Once the final layout has been agreed by all parties, 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 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 the location of service runs and soakaways.

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 illustrate and identify the location and specification of tree protection barriers and non-compacting ground protection to be installed on site to prevent tree damage, as well as the other considerations detailed in the AMS.

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. A red 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, the minimal area which 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			IDENITIFICATION ON PLAN
Category U Those in such a conditions 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)			IDENITIFICATION ON PLAN
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Trees of high quality within 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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	St e	Cr o					
G0001	Sycamore	7	350	4.5	2	2	4	3	3	3	3	3.0/W	Y	Good	F	G	F	· Group x2 stems. · Stem abutting boundary wall. · Suppressed due to removed Sycamore.	· Remove to ground level. · Treat stumps to prevent regrowth	10+	C	4.20
T0001	Common Lime	18	625*	5.5	5.5	3	3	3.5	3.5	7	7	5.0/N	M	Fair	F	G	F	· Dense mature epicormic growth precludes full VTA of stem. · Historical high pollard. · Dieback and deadwood at cutting points.	· Remove all epicormic growth to 5.0m height · Crown clean	40+	B	7.50
T0002	Common Lime	20	650*	5.5	5.5	6	5	6	6	6	6	5.0/S	M	Good	F	G	F	· Dense mature basal epicormic growth precludes full VTA of stem. · Main unions well formed. · Old high pollard. · Dieback and decay at old cutting points. · Broken hanging branch.	· As Above	40+	B	7.80
T0003	Common Lime	19	650*	4	7	7	4	6	4	4	4	3.0/N	M	Good	F	G	G	· Dense mature basal epicormic growth precludes full VTA of stem. · Unions well formed throughout crown. · Historical high pollard. · Recent failure of epicormic over neighbouring driveway. · Best tree of group.	· As Above · Crown clean. · Re-pollard eastern scaffold with storm damage	40+	B	7.80
T0004	Wild Cherry	4.5	140	1	4	3.5	1	4	1	1	4	1.5/N	Y	Fair	F	F	F	· Buried root collar. · Poor union at graft. · Suppressed and asymmetrical crown. · Dieback.	· Remove. · Replant	<10	C	1.68
T0005	Common Beech	14.5	465	7.5	7	7	4	4	4	4	4	3.5/S	SM	Good	G	G	F	· Poor form and structure. · Included bark unions and crossing limb. · Asymmetrical crown east due to competition.	· Removal of crossing limb. · Reduction in lateral spread of scaffold limbs · Reduction in height of 1 co-dominant leader to subordinate	40+	B	5.58
T0006	Wild Cherry	4.5	140	1	4	4	1	2	2	2	2	1.5/S	Y	Good	F	G	F	· Buried root collar with girdling material. · Well formed main union. · Suppressed and asymmetrical crown east	· Formative Structural Prune	20+	C	1.68

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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	Sl e	Cr o					
T1659	Sycamore	21	805	10	7	7	5	8	8	8	8	8.0/W	M	Good	G	G	F	· Vertical seam western aspect of stem. · Well formed unions throughout crown Historical high pollard.	· Re-pollard	40+	B	9.66
T0022	Common Oak	23	940	12	14	4	12	6	5	6	10	7	M	Fair	G	F	F	· Rooting area and root collar under grass clippings. · Desiccated fungal fruiting body at cavity 7.0m height, north aspect of stem. Storm damage and failure co-dominant leader 14 0m height Major deadwood.	· Reduction in height and lateral spread to reduce loading and canopy area. · Detailed assessment of stem.	40+	C	11.28
T0007	Wild Cherry	5	255	4	4	2.5	4	3	3	3	3	2.0/N	SM	Good	F	G	F	· Partially buried root collar. · Located within gravel courtyard area. · Suppressed with reduced form and structure	· N/A	20+	C	3.06
T0008	Mimosa sp	10	75	4	4	5	2	3	3	3	3	3.5/W	Y	Good	P	F	G	· Located within small planting bed. · Included bark unions at base of stem.	· N/A	20+	C	0.90
T0009	Holm Oak	9	175	3	3	3	3	3.5	3.5	3.5	3.5	3.0/W	Y	Good	G	G	F	· Buried root collar. · Located within gravel courtyard area. · Well formed main union. · Crossing and rubbing branch structure.	· Crown clean. · Formative Structural Prune.	40+	B	2.10
T0010	Tulip Tree	7	170	0	5	5	0	0	3	3	0	1.0/E	SM	Good	P	F	F	· Basal decay cavity caused failure of tree · Remaining stems horizontal growth habit.	· Reduction in height and lateral spread. · Propping. · Alternative = Removal.	10+	C	2.04
T1645	Norway Maple	13.5	450	6	5.5	6	5	6	5	5	5	6.0/N	SM	Good	G	G	F	· Reduced branching structure due to surrounding trees and competition. · Major deadwood in crown.	· Crown clean. · Structural prune. · Gentle reduction in height and lateral spread.	40+	B	5.40
T1646	Wild Cherry	8	575	4	7	7	4	5	5	5	5	1.5/E	M	Fair	G	F	F	· Bacterial canker on western aspect of stem. · Poorly formed main union. · Vertical ribbing around stem below unions Over-extended low scaffold limbs.	· Remove. · Replant.	10+	C	6.90

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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	St e	Cr o					
T0011	Holm Oak	7	190	3	3	3	1	3	3	3	7	2.5/E	Y	Good	G	G	F	· Located within small planting bed · Buried root collar. · Well formed main union. · Poor branching structure. · Broken hanging branch.	· Crown clean. · Formative prune.	40+	B	2.28
T0012	Holm Oak	10	370	5	5	5	5	3.5	4.5	3.5	3.5	2.0/S	SM	Good	G	G	F	· Located within small planting bed · Buried root collar. · Co-dominant leader with included bark union. · Crossing rubbing branching	· Reduction in height of included co-dominant leader to subordinate	40+	B	4.44
G0002	Lawson Cypress	4.5	100	1.5	1.5	1.5	2	1	1	1	1	1.0/N	Y	Good	F	F	F	· Group x2 trees. · Buried root collar. · Included bark unions. · Poor branching structure.	· Future removal	10+	C	1.20
G0003	Irish Yew	6	150	1	1	1	1	0.5	0.5	0.5	0.5	0.5/N	SM	Good	F	G	G	· Group x3 trees. · Multi-stem from base. · Included bark compression fork. · Typical of species. · Small Holly to rear 12cm diameter.	· N/A	20+	B	1.80
T1681	Incense Cedar	17	590	4	4	4	4	5	5	2	2	2.0/S	SM	Good	G	G	F	· Over-extended scaffold limb to north. · Well formed union.	· N/A	40+	B	7.08
T1683	Incense Cedar	17.5	565	4	4	4	4	3.5	6	3.5	3.5	4.0/W	SM	Good	G	G	F	· Main union included bark 8.0m height. · Possible crack at union. · Adaptive growth under union.	· Aerial inspection of union.	40+	B	6.78
T0013	Magnolia species	5	140	3	3.5	3.5	3	2	2	2	2	0.5/N	Y	Good	F	G	G	· Located within flag-stone courtyard. · Partially buried root collar. · Typical branching structure for species.	· N/A	20+	B	1.68
T0014	Atlas Cedar	16	525	7.5	8	7.5	4	3	3	6	6	2.0/S	SM	Good	F	G	F	· Buried root collar. · Typical branching structure for species. · Dense canopy with crossing rubbing branching.	· Crown clean	40+	B	6.30
G0004	Irish Yew	6	120	1.5	1.5	1.5	1.5	0.5	0.5	0.5	0.5	0.5/N	SM	Good	F	G	G	· Group x2 trees. · Buried root collar. · Multi-stem from ground level. · Included bark unions typical of species.	· N/A	20+	B	1.44
T0015	Incense Cedar	13	520	3	3	3	3	6	6	6	6	6.0/E	SM	Good	F	G	G	· Base of stem with sweep and self-corrected lean. · Single leader.	· N/A	40+	B	6.24

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 Radius/m
				N	E	S	W	N	E	S	W				Base	Stem	Crown					
T1684	Incense Cedar	15	670	5	5	4	4	5	5	5	5	5.0/N	SM	Good	G	F	G	· Included bark main union 3.0m height No real adaptive growth	· Installation of steel cable.	40+	B	8.04
T0016	Western Hemlock	13	330	4	4	4	4	3	3	3	3	3.5/S	SM	Fair	G	F	G	· Old wounds on stem. Good occlusion but weeping · Tip dieback throughout lower crown	· Fertilization	20+	B	3.96
G0005	Irish Yew	7	100	2	2.5	2.5	2	0.5	0.5	0.5	0.5	0.5/N	SM	Good	F	G	G	· Group x4 trees. Buried root collar. · Multi-stem from ground level Reasonable unions.	· N/A	20+	B	1.20
T1685	Atlas Cedar	20	650	6	6	6	5	4	4	4	4	4.0/N	SM	Good	F	G	F	· Buried root collar · Multipule scaffold limbs with poor unions · Typical of species · Deadwood throughout	· Crown clean	40+	B	7.80
G1687	Lawson Cypress	17	690	3	3	3	3	2	2	2	2	2.0/N	SM	Good	G	F	F	· Group x3 trees · Multiple co-dominant leaders from 2.0m height. All formed with included bark unions. Some adaptive growth under union. · Secondary inclusions in upper crown.	· N/A	20+	C	8.28
T1686	Western Hemlock	18	480	5	5	5	5	5	2	2	2	4.0/W	SM	Good	G	G	G	· Deadwood throughout crown	· Crown clean	40+	A	5.76
T1690	Scots Pine	17	540	4	5.5	4	5.5	6.5	6.5	6.5	3	5.0/W	SM	Good	F	G	G	· Direct root damage and girdling roots · Self-corrected lean. Broken hanging branch · Major deadwood throughout from shading.	· Crown clean	40+	B	6.48
T1691	Lawson Cypress	18.5	550	4	4	4	4	5	3	4	5	3.0/E	M	Good	G	F	G	· Three co-dominant leader from 1.5m height. Included bark unions and compression fork. · Very little adaptive growth · Upper structure reasonable. · Deadwood throughout.	· N/A	20+	C	6.60
G1692	Scots Pine	19	530	4	6	4	6	6	6	6	6	5.0/W	SM	Good	G	G	F	· Group x2 trees. Minor storm damage. · Deadwood throughout	· Crown clean	40+	A	6.36

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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	St e	Cr o					
T1693	Lawson Cypress	17.5	345	4	4	4.5	4.5	3	5	4	4	4.0/S	M	Good	G	F	G	· Three co-dominant leader from 2.0m height. · Included bark unions with compression fork. · Some adaptive growth under union to west.	· N/A	20+	C	11.34
T1694	Scots Pine	18	500	4	6.5	6	4	5	7	5	7	3.0/S	SM	Good	G	G	F	· No access around full circumference of stem. · Included bark co-dominant leader at 11.0m height.	· Reduction in height of small secondary included bark leader to subordinate. · Crown clean.	40+	B	6.00
T1698	Lawson Cypress	14	500	3	3	3	3	4	4	4	4	3.0/W	SM	Good	F	F	G	· Direct root damage. · Four co-dominant leader from 1.0m height. · All included bark unions with compression fork. · No adaptive growth under union.	· N/A	20+	C	6.00
T1699	Wild Cherry	5.5	325	5	2	5	7	3	3	3	3	2.0/E	SM	Good	P	P	F	· Cracked and failed co-dominant stems. · Advanced decay.	· Removal	<10	U	3.90
T0017	Chilean Firebush *Embothrium sp*	7	125	2.5	2.5	2.5	2.5	0.5	0.5	0.5	0.5	0.5/S	Y	Good	F	G	G	· Multi-stem from ground level. · Reasonable unions.	· N/A	20+	B	1.50
T0018	Blue Gum	11	260	3.5	4.5	2	2	6.5	6.5	6.5	6.5	5.0/W	Y	Good	P	F	G	· Significant basal wounds and decay.	· Removal	<10	U	3.12
T0019	Sorbus species	9	280	4	3	3	4	4.5	4.5	4.5	4.5	3.0/N	Y	Good	F	F	G	· Surface roots with direct damage. · Partially buried root collar. · Scaffold limb with included bark union.	· N/A	20+	C	3.36
T0020	Wild Cherry	6	270	5	5.5	4	4	3	1.5	3	3	2.0/E	SM	Good	F	G	F	· Ground Ivy precludes full VTA of stem. · Reasonable union at graft. · Asymmetrical crown east. · Climbing plant in crown.	· N/A	20+	C	3.24
T0021	Lawson Cypress	7	200	3	3	3	3	1	1	1	1	0.5/N	Y	Good	G	G	G	· Reasonable quality tree	· N/A	40+	B	2.40
T1701	Indian Horse Chestnut	11	510	7.5	8	4.5	4.5	3	3	5	5	2.5/E	SM	Fair	F	F	F	· Bark necrosis and stem bleeding. · Failed co-dominant leader with stem decay. · Corrected lean.	· Removal	10+	C	6.12
T0022	Common Beech	6.5	150*	1	1	5	5	3	3	3	3	2.0/S	Y	Good	F	F	F	· Most likely self-set. · Poor form and structure. · Grey squirrels damage throughout crown. · Suppressed Elder in understorey.	· Removal	20+	C	1.80

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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	St e	Cr o					
T0023	Dawyck Beech	13	230	3.5	3	3.5	3	4	4	4	4	3.0/N	SM	Good	G	F	G	· Buried root collar · Included bark unions typical of species	· N/A	20+	B	2.76
T0024	Sweetgum	7	180	3	3	3	3	3	3	3	3	2 0/W	Y	Good	G	F	F	· Included bark co-dominant leader. · Split and cracking secondary union	· Removal	<10	U	2 16
T0025	Deodar Cedar	23	1560	11	11	11 5	11	2	3	2	3	3.0/S	OM	Fair	G	G	F	· Over-extended scaffold limbs Well formed unions. · Co-dominant leader at height · Included bark union. · Storm damage. Major deadwood	· Crown clean.	20+	B	15 00
T0026	*Sorbus ana* "Mitchellii"	9	185	4 5	3 5	3.5	4.5	2	2	2	2	0 5/W	SM	Good	G	F	F	· Multiple scaffold limbs with poor unions. · Dense branch structure with crossing rubbing	· N/A	20+	B	2 22
T0027	Wild Cherry	8	240	3	4 5	4.5	5	4	4	2	2	2 0/N	M	Good	G	G	G	· Multiple co-dominant leader from graft. · Reasonable unions	· N/A	20+	B	2.88
T0028	Black Mulberry	10.5	415	5	4	4	5.5	2	2	2	2	1.5/E	M	Good	G	P	G	· Split and failed main union. · Ratchet-strap bracing system in canopy	· Check and adjust tension. · Replace if girdling and damaging stems	10+	C	4.98
T0029	Cypress tree *Taxodium sp*	7	180	1.5	1 5	1.5	1 5	0.5	0 5	0.5	0.5	0.5/N	Y	Good	G	F	G	· Multi-stem from ground level · Reasonable unions. · Included bark secondary union · Will eventually fail.	N/A	20+	C	2 16
T0030	Unidentified	11	450	6	6	6	6	5	5	5	5	3.0/E	SM	Good	F	G	F	· Direct root damage. Main union included bark Crossing branch with natural bracing. Historical storm damage central leader. Scaffold limbs with apical co-dominance	· N/A	20+	B	5 40
T0031	Coast Redwood	15 5	905	4	4	4	4	3	3	3	3	4 0/E	SM	Good	G	G	G	· Good quality tree. · Slightly corrected lean.	· N/A	40+	A	10.86
T0032	Western Hemlock	11	170	4	4	4	4	2	2	2	2	2.5/N	Y	Good	F	G	G	· Slightly lifted root plate · Girdling roots full circumference of stem	· N/A	40+	B	2.04
T0033	Blue Gum	15	510	8	7	6	6	4	4	6	6	4.0/N	SM	Good	F	G	G	· Multiple surface roots · Self-corrected lean. · Well formed unions	· N/A	40+	A	6.12

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 Radius/m
				N	E	S	W	N	E	S	W				Bas	Stem	Crown					
T0034	Common Ash	16	360	6	5	5	6	6	6	6	6	4.0/S	SM	Good	F	G	G	· Limited root space. Girdling roots · Well formed unions throughout crown	· N/A	20+	B	4.32
T0035	Paperbark Maple	6.5	170	4	4	2	2	3	3	3	3	2.0/E	SM	Good	G	G	G	· Three co-dominant leader from 1.0m height Included bark unions typical of species	· N/A	40+	A	2.04
T0036	Lawson Cypress	8	185	4	4	2	2	1	1	1	1	1.0/N	Y	Fair	G	G	F	· Asymmetrical crown towards east due to competition. · Broken hanging branch	· Crown clean	20+	C	2.22
T0037	Robinia	15	320	5	5	6	6	4	5	4	4	2.5/S	SM	Good	P	G	G	· Three co-dominant stems from ground level Included bark unions with compression fork. North stem with corrected lean.	· N/A	20+	C	3.84
T0038	Blue Gum	16.5	360	2	5	5	6	10	5	5	5	4.0/S	SM	Good	G	G	F	· Corrected lean with adaptive bulging. Well formed main union. Asymmetrical crown south.	· N/A	40+	B	4.32
T0039	Judas tree *Cercis sp*	17	500	7	8	3	7	2	2	2	3	3.0/W	SM	Good	G	G	F	· Well formed main union for species. · Reasonable branch structure Asymmetrical crown towards east due to competition	· N/A	40+	B	6.00
T0040	Wild Cherry	8	330	8	8	10	8	4	4	2	4	3.0/N	M	Good	P	G	G	· Multi-stem from ground level. Poorly formed included bark unions Significant ribbing and adaptive growth	· Sympathetic reduction in height and lateral spread to reduce static load.	20+	C	3.96
T0041	Italian Cypress	10	320	2	2	2	2	2	2	2	2	1.5/W	SM	Fair	F	G	G	· Buried root collar. Multiple included bark unions typical of species Dieback northern crown.	· Removal	10+	C	3.84
T0042	Black Mulberry	9	310	4	4	4.5	4	2	2	2	2	0.5/E	M	Good	G	F	F	· Well formed main union Regularly reduced in height and lateral spread.	· Reduction in height and lateral spread to old cutting points · Crown thin	20+	C	3.72
T1704	Common Lime	21.5	925*	7	7	7	7	4	4	4	4	4.0/N	M	Fair	F	F	G	· Mature dense epicormic growth precludes full VTA of stem Included bark main union Major deadwood throughout crown.	· Crown clean	40+	B	11.10

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 Radius/m
				N or	E as	S o	W es	N or	E as	S o	W es				B as	Si e	Cr o					
T1703	Common Lime	22	1000	5	8	8	8	5	5	5	5	4.0/N	M	Fair	G	G	F	· No visible defects or decay around base of stem. · Well formed unions throughout · Major deadwood throughout crown.	Crown clean. Crown thin.	40+	B	12.00
T0043	Nootka Cypress	7	245	2	4	4	2	4	0.5	1	4	0.5/E	SM	Good	F	G	F	· Multi-stem from ground level · Reasonable unions. · Asymmetrical crown	· N/A	20+	C	2.94
T0044	Wollemia Pine	4	85	1.5	1.5	1.5	1.5	0.5	0.5	0.5	0.5	1.0/N	Y	Good	G	G	G	· Buried root collar	· N/A	40+	A	1.02
T0045	Common Holly	6	180	2	3	2	2	2	2	2	2	1.5/E	Y	Good	G	F	G	· Scaffold limb assuming apical co-dominance. · Included bark secondary union.	· N/A	10+	C	2.16
T0046	Japanese Maple	4	105	2.5	2.5	2	2.5	2	2	2	2	1.5/S	Y	Good	F	G	G	· Buried root collar. · Twin-stemmed from ground level · Reasonable union for species	· N/A	40+	B	1.26
T0047	Dogwood	7	100	3	3	2	2	1.5	1.5	1.5	1.5	2.0/W	Y	Good	F	F	P	· Buried root collar. · Lifting paving slab. · Historical wound on stem. · All unions included bark. · Failed and split secondary union	· Remove and replant. · Alternative = Bolt failed union.	10+	C	1.20
T0048	Sweetgum	10	160	3	3	3	3.5	3	3	3	3	2.5/W	Y	Good	F	F	G	· Buried root collar. · Wound on stem. · Good occlusion.	· N/A	40+	B	1.92
T0049	Silver Birch	20	475	5	5	5	5	5	5	5	5	3.0/S	SM	Good	G	G	G	· Good quality tree	· N/A	40+	A	5.70
T0050	Pittosporum	8	350	3	3	3	3	1.5	1.5	1.5	1.5	2.0/N	M	Good	G	F	G	· Included bark unions throughout crown · Typical of species	· N/A	20+	C	4.20
T0051	Scarlet Oak	12	305	5	3	3	5	5	3	5	5	5.0/W	SM	Good	G	G	F	· Poor branching structure with crossing rubbing branching. · Grove x3 Dogwood in understorey	· Formative prune	40+	B	3.66
T0052	Common Walnut	13	420	8	6	6	8	5	5	5	5	1.5/S	SM	Good	G	G	F	· Over-extended scaffold limbs · All unions well formed · Included bark co-dominant leader. · Broken hanging branch. · Major deadwood.	· Crown clean	40+	B	5.04
G0006	Jacquemont's Birch	11	205	3	3.5	3	3	3	3	3	3	3.0/E	Y	Good	G	G	G	· Group x5 trees · Tight forks typical of species.	· N/A	40+	A	2.46
G0007	Lawson Cypress	14	600	3.5	3.5	3.5	3.5	0	0	0	0	0.5/N	M	Good	G	F	G	· Group x2 trees. · Branching precludes full VTA of stem · Northern tree with co-dominant leader.	· N/A	40+	B	7.20

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 Radius/m
				N	E	S	W	N	E	S	W				Bas	Stem	Crown					
G0008	Paper Birch	11	215	4	4	4	4	3	3	3	3	2.0/S	Y	Good	G	F	G	· Group x5 trees. Minor direct damage base of stem. More co-dominant leaders Multiple scaffold limbs. All unions well formed.	· N/A	40+	A	2.58
G1672	Lawson Cypress	11	610	2	2	2	2	1	1	1	1	1.5/N	SM	Good	G	P	F	· Group x2 trees. Co-dominant leaders from 2.0m height. Poorly formed included bark unions Compression fork Included bark secondary union.	· Removal	10+	C	7.32
T0053	Leyland Cypress	8	300	2.5	2.5	2.5	2.5	2	2	2	2	2.0/N	SM	Good	G	G	F	· Reasonable quality tree Scaffold limbs assuming apical co-dominance	· N/A	40+	A	3.60
T0054	Deodar Cedar	14	570	6	6.5	6	6.5	2	2	2	2	3.5/N	SM	Good	G	G	F	· Co-dominant leader at height Possible storm damage Major deadwood.	· Crown clean Reduction in height of co-dominant leader to subordinate.	40+	B	6.84
T1662	Sycamore	16.5	665	4	8	8	5	7	3	3	7	6.0/S	M	Good	G	G	G	· Corrected lean. Asymmetrical crown Major deadwood	· Crown clean	40+	B	7.98
T1661	Sycamore	19.5	895	4	10	10	6	5	5	5	5	3.5/S	M	Good	G	G	F	· Scaffold to south with included bark Historically reduced in lateral spread to north. Multiple reduction cuts with cavities	· Sympathetic reduction in height and lateral spread	20+	C	10.74
G1666	Common Lime	22	700	7	7	7	7	3	3	3	3	5.0/W	M	Fair	F	G	F	· Group x3 trees. Basal epicormic growth precludes full VTA of stem. Appears historically high pollard Major deadwood Declining health	· Crown clean. Re-pollard	20+	C	8.40
T1657	Common Horse Chestnut	20	830	5	9	9	5	3	3	3	3	3.0/E	M	Good	F	G	F	· On raised bank adjacent to drive. Scaffold to east good union. Likely topped at 10.0m height Regrowth appears well attached.	· N/A	40+	B	9.96
T1656	Common Lime	20	380	3	7.5	3	3	3	3	3	3	4.0/E	SM	Good	G	G	F	· Main union 2.0m height. Included bark typical of species Asymmetrical crown towards east Broken hanging branch	· Reduction in height and lateral spread	40+	C	4.56
T1655	Common Lime	20	300	2	5	2	2	7	7	7	7	5.0/E	SM	Fair	F	G	F	· Suppressed low quality tree Major deadwood	· Removal	20+	C	3.60

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 are 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:

- 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*
- Mattheck, C, Bethge K, Weber K. (2015) *The Body Language of Trees – Encyclopaedia of Visual Tree Assessment* Karlsruhe Institute of Technology Campus North.

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 trees and development project. Should you have any further questions or concerns, please do not hesitate to contact us again.

REPORT CLASSIFICATION: Tree Survey & Constraints Plan

REPORT STATUS: Final

REPORT COMPLETED BY: Mr. Jason Hasaka *HNDArb TechArborA*
Principal Arboricultural Consultant

SIGNATURE: **DATE: 01.03.2019**